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A Lecture
ON
THE CAUSES OF INSANITY.[1]

BY F. W. MOTT, M.D. LOND., LL.D. EDIN., F.R.S.,
PATHOLOGIST TO THE LONDON COUNTY ASYLUMS.

MR. PRESIDENT AND GENTLEMEN,—The increase of insanity and feeblemindedness is a matter deeply concerning the race and its future, and a most disturbing factor in the minds of the ratepayers; and can it be wondered at when we consider that last year alone (1913) the total cost of maintenance of London pauper lunatics under the control of the London County Council amounted to over three-quarters of a million (£755,198). This does not include the cost incurred by the Metropolitan Asylums Board for the housing and maintenance of imbeciles, idiots, and incurable cases of insanity, which would raise the annual expenditure to at least a million. Soon to this sum will have to be added a fresh charge for the life segregation of mental defectives—a very necessary procedure which from the ratepaying, as well as from a eugenic, point of view will well repay the outlay.

The first duty of the State is to prevent disease; failing that, to cure disease; and failing that, to prolong life and to relieve suffering. Have the representatives of the ratepayers in the past fulfilled this maxim, or have they not rather begun at the wrong end and spent huge sums of money to prolong the lives of the derelicts of humanity in unnecessarily costly buildings? Asylums have been built at a cost of £300–£500 per bed, and it may well be asked whether the money might not have been more advantageously spent on "brains instead of bricks." We want to educate the public conscience to the value of scientific research, for we cannot hope to prevent or cure insanity or feeblemindedness until we know the causes underlying the diseases of the mind and mental deficiency.

SYPHILIS AND MENTAL AND NERVOUS DISEASE.

The history of the progress of medical science demonstrates the fact that the application of the biological, physical, and chemical sciences to the study of the causes of disease has led to discoveries by means of which prevention and successful treatment have resulted. When I was appointed pathologist to the London County Asylums syphilis as a cause of mental disease was not mentioned in the reports. My hospital experience had taught me that it was by far the most important cause of organic disease of the nervous system; and this led me to make researches in this subject in respect to asylum patients. In a few years by dint of constant research, especially by the study of numbers of cases of the juvenile forms of general paralysis of the insane in the subjects of congenital syphilis, I came to the conclusion that syphilis is the essential cause of this terrible malady, and that if there were no syphilis there would be no general paralysis or tabes. This premise has been proved by the fact that in every case of general paralysis the cerebro-spinal fluid gives a positive reaction, and in 75 per cent. of the cases of tabes. The other 25 per cent. in which it is not present is not a proof that it never had been present. The discrepancy in the percentages between the two diseases can be explained by the fact that tabes is a very slow process of destruction, and for reasons which I have indicated in my report to the Neurological Section of the International Congress of Medicine and therefore need not go into here, the poison of the spirochætal activity may not necessarily be formed in the nervous system.

Spirochætes in Brains of General Paralytics.

Since the discovery of Noguchi and Moore of spirochætes in 12 out of 70 brains of general paralytics, confirmed by myself and many other observers, any doubt as to syphilis being the essential cause has been dispelled. In fact, in a series of 100 brains of persons dying from this disease I have found the spirochæte in 66, in some cases more numerous than in the primary sore. According to my experience they are more numerous and found with greater ease in cases dying soon after admission. They exist in scattered foci all over the grey matter of the cortex, but especially can they be found in those regions where the earliest signs of adhesions of the membranes occur—namely, the frontal lobes. The colonies are perhaps not more than a millimetre to a few millimetres in size, and when they exist the grey matter has a softer consistence and a pinkish appearance. Microscopically there is more evidence in the neighbourhood of the spirochætal colonies of inflammatory reaction, and one sees the perivascular sheaths filled with lymphocytes and plasma cells. Sometimes the spirochætes may be found surrounding the perivascular spaces in great numbers, as this photomicrograph shows. (Fig. 1.)

FIG. 1.

Section of cortex of a patient dead of general paralysis, stained by a modified Levaditi method. A portion of the lumen of a small vessel is seen filled with blood corpuscles. Around is the inflamed lymphatic sheath filled with lymphocytes and plasma cells. In this are seen several spirochætes (indistinct). Outside this is a clear space which is an artifact produced by the brain separating from the sheath of the vessel. In the brain substance are seen great numbers of spirochætes stained black. (Magnified 1400 times.)

It is very easy to demonstrate the presence of the

[1] Being the Cavendish Lecture delivered before the West London Medico-Chirurgical Society on June 19th, 1914.

spirochætes by taking a little of the grey matter, rubbing it up in a mortar with salt solution, and examining the emulsion with the dark-ground microscope. If the preparation is made from a brain obtained soon after death the organisms can be seen moving. They differ in no way morphologically from the spirochætes obtained from the primary sore or from a congenital syphilitic organ. By Neisser-Pollak puncture method Förster and Tomaczewski have obtained living spirochætes in the small cylinder of brain removed during life in 40 per cent. of 60 cases. If we had time to search there is no doubt spirochætes could be found in every case; for we know that the cerebro-spinal fluid in practically every case of general paralysis gives a positive Wassermann reaction.

Lesions and Remissions in General Paralysis.

There is reason to believe that the spirochæte enters the central nervous system when generalisation takes place in the secondary period, and it remains latent for a number of years; it then takes on active multiplication with production of toxins resulting in an encephalitis with mental and motor phenomena of irritation. But this encephalitis is accompanied by a neural destruction and a degree of dementia and paresis proportional to the neuronic destruction. We know that then the patient may remain more or less demented a number of years until a recurrence occurs, due no doubt to a fresh development of the parasites, or he may die from some intercurrent disease. Sometimes, however, after an attack of acute mental and motor irritation phenomena, or a loss of consciousness, the patient makes an apparent recovery (without any specific treatment) and is discharged from the asylum, only to return again on account of a recurrence of symptoms. We must suppose that nature itself has arrested the multiplication of the specific organisms by the production of spirillocidal antibodies.

What, then, has caused the recurrence? Either the organism has survived as an extra- or intracellular resistive spore, or the explanation of Ehrlich may be the correct one—viz., some few of the spirochætes are resistive to that particular antibody and remain undestroyed, awaiting a favourable moment of a lowered resistance of the tissues to start multiplying. (Fig. 2.) Owing to the extreme minuteness of this organism it is very difficult to investigate the question of spore formation. An immense number of granules may be seen in the brain and in the proliferative cells of the inflamed perivascular sheaths; these may be spores, but I am inclined to think they are granules shed by the spirochætes which are undergoing plasmolysis. Occasionally, however, I have seen in sections and films spirochætes stretched out with granules in their interior (*vide* Fig. 2).

If these cases with remissions had been treated by any of the numerous spirillocidal methods of intravenous or intrathecal injections of arsenobenzol compounds they would have been claimed as therapeutic cures. Candidly I do not think any marked success has attended any of the methods of treatment so far employed. Indeed, several cases in which I found enormous numbers of spirochætes in the brain had been treated with large doses of salvarsan prior to admission to the asylum. We must then rather look to the prevention of the spread of syphilis and its early diagnosis and treatment by modern methods as the most hopeful way of combating this terrible malady.

Incidence of General Paralysis.

Of the total admissions to the asylums of the County of London every year about 10 per cent. are general paralytics; more than 15 per cent. of the male admissions are general paralytics, and these are recruited from men of all social grades who, prior to the onset of the disease, for the most part were efficient and productive social units of civic worth and capacity. True, the females are largely recruited from the unfortunate class of women, many of whom are mental defectives. Many of the women so affected have been driven to prostitution by seduction, desertion, and destitution, but by no means all female paralytics are immoral women, for a good number are the innocent wives of men by whom they have been infected and who are unaware of the real cause of the disease. Moreover, the histories of the families of paralytics show that not infrequently they have transmitted syphilis to their offspring. Incidentally I may remark that of the 60 juvenile paralytics I have collected in 20 per cent. one of the parents, usually the father, was a paralytic.

FIG. 2.

Film of brain emulsion stained by Fontana method, showing spirochæte which has lost its coils and is filled with granules. (Magnified 1400 times.)

I have made an inquiry regarding the incidence of general paralysis in the two sexes in London parishes,[1] and I have found that the females are relatively more numerous in the poorer East-end parishes, and there is a correlation between female paralysis and degraded poverty. Now it is interesting to note that the higher you rise in the social scale the less often do you meet with general paralysis in the female sex. This is not the case with the male sex. In the juvenile form, where the chances of syphilitic infection are equal, the sexes are equally affected. The incidence of general paralysis in a population is a measure of the incidence of syphilis.

In connexion with the different class of female to male affected by this disease and the large number of female general paralytics who are prostitutes, I may mention that these facts may be correlated with observations I made some years ago on the convolutional pattern of the brains of male and female paralytics; for I was struck by the fact that, as a rule, the male paralytic generally possessed a well-convoluted brain of above the average, whereas the female paralytic possessed very frequently a small brain of simple convolutional pattern indicative of an imbecile.

Economic Considerations.

If it were not for the fact that there is no

[1] THE LANCET, Nov. 15th, 1913, p. 1374.

accumulation of general paralytics in the asylums, as the death-rate equals the admission-rate, the cost of maintenance from this disease alone would be enormous. But it must be remembered that many cases of organic dementia, imbecility, idiocy, epilepsy, and brain-softening are due to syphilis. Moreover, it is the most potent cause of nervous disease—e.g., tabes is always syphilitic, hemiplegia, paraplegia, and likewise aphasia are very often due to syphilis; and the sufferers with these diseases do not die in a short time, as is the case in general paralysis, but have to be maintained for numbers of years in asylums, infirmaries, and institutes for incurables. Numbers of other incapacitating diseases due to syphilis might be mentioned—e.g., aneurysm and aortic disease.

As an asset to the nation the value of each individual depends upon the amount of physical and mental work he or she can produce, and the capacity for breeding and rearing healthy children. Now venereal disease, especially syphilis, although in the majority of instances, from its direct effects, it does not prevent a man or woman working, by making them bedridden, nevertheless by direct or indirect effects on the vital organs it diminishes considerably the efficiency and length of productive usefulness of the individual; and in at least 15 per cent. of persons affected by syphilis causes, when no treatment or insufficient treatment is adopted, fatal incapacitating diseases which render the individual prior to death a monetary burden to the State for a number of years, not to mention the great infant mortality and mental and physical disabilities in the offspring that survive. From an economic and productive point of view the State and municipal authorities could save in the end enormous sums of money by a wise expenditure in preventing the spread of this disease and by promoting cure in the early stages, thereby preventing generalisation in the blood and lymph streams and infection of the central nervous system. Those of my readers who are interested in the subject of general paralysis of the insane in the light of recent research I would refer to my article on the Nature of the Condition termed Parasyphilis.[3]

THE ANATOMICAL SUBSTRATUM OF MIND IN RELATION TO INSANITY AND IDIOCY.

When we examine the brain of a general paralytic dement, or a senile dement, or a case of organic dementia from cerebral softening, both naked-eye and microscopic evidence show a destruction of the cerebral cortex—the anatomical substratum of the higher functions of the organ of mind—and proportional to the dementia are the decay and destruction of the nerve cells and fibres. Likewise in idiocy and low grades of imbecility we find a simple convolutional pattern which means a less extensive area of the cerebral cortex; moreover, microscopic examination shows a failure of development of cells and fibres, due in the majority of cases to an inborn germinal deficiency. The dement, whether a paralytic or senile dement, is an individual who was born rich but is now poor in the anatomical basis of mind, whereas the idiot and low-grade imbecile were born poor in the material basis of mind and could never be other than destitute. For I may remind you that at birth the convolutional pattern peculiar to the individual is present, and all the neurones which are to grow and develop and become the storehouse of memory of experiences are there. And it is an interesting fact that just as there is a similarity in the bodily formation and physiognomy of relatives, so there is a similarity in the folds and fissures forming the convolutional pattern of the brain. "Like tends to beget like" in the morphology of the organ of mind.

It is not surprising, therefore, that my observations, based upon a large amount of material and investigations, lead me to form the conclusion that the principal causes of mental deficiency may be summed up in the fact that, as regards the functions of the organ of mind, "like tends to beget like." Although occasionally in a family where mental deficiency is not expected an idiot or an imbecile is born (and in such cases not infrequently we obtain a history of syphilis or alcoholism or both in the parents), mentally defective children, particularly if more than one occurs in a family, are usually the offspring of parents who are imbecile or of low-grade mentality.

Inquiry as to Mental Deficiency and Insanity.

I have instituted an inquiry regarding mental deficiency and insanity. As the subjoined table shows, 2074 insane parents in the London County asylums had 4430 children under 16, 3543 being of school age. Among these there were 50 children in the mentally defective schools. This gives only a percentage of 2·1 of insane parents with mentally defective children, and a percentage of 1·4 children of insane parents of school age who were mentally defective. A considerable, but as yet unascertained, percentage of these children owe their mental deficiency not to a germinal hereditary defect but to congenital, pre-natal, or post-natal causes.

Number of children over school age	355
,, ,, of school age	3543
,, ,, under school age	532
Total number of children	4430
,, ,, parents	2074

Average number of children under 16 years of age to each parent = 2·1.

Number of mental defectives = 50 out of 4430 = 1·1 per cent.

50 mentally defective offspring from 45 insane parents.

Percentage of parents in asylums with mental defectives in special schools = 2·41.

These figures show that mental deficiency is not so closely correlated with insanity of the parents as was suspected; moreover, I may remark that it was not an uncommon thing to learn that the children of an insane parent were unusually bright and intelligent.

Now if we compare the results of this inquiry with the results obtained by an investigation[4] of the pedigrees of 50 mentally defective children from an East-end special school we find that here again there was only one parent insane (2 per cent.), but there were 11 grandparents (22 per cent.). If, however, there was no insanity in the parents the condition of the homes, the low wage-earning capacity of the fathers, and the very few who were in continuous employment, as well as the low standard as a rule reached by the parents in the schools showed mental inefficiency. The prevalence of alcoholism, tuberculosis, and syphilis in numbers of members of the stocks afforded evidence of

[3] Archives of Neurology and Psychiatry, vol. vi.

[4] By the kindness of the Hon. Rupert Guinness, who initiated and defrayed the expenses of this inquiry, I am permitted to refer to these facts. A full report of this inquiry will shortly be published.

environmental causes of degeneracy. The number of grandparents affected supports the truth of Morel's doctrine on the intensification of mental deficiency in successive generations, which theory is supported by my statistical results of anticipation or antedating in the case of insanity, which is the tendency to the occurrence of the mental disorder at an earlier age and in a more intense form in successive generations; this will be considered more fully later.

THE RACE POISONS IN RELATION TO DEGENERACY.

Although mental deficiency is not limited to any social grade, and an idiot or imbecile may even sometimes crop up unexpectedly in a family in which both maternal and paternal stocks are apparently sound, yet as a rule it is the sediment of our large overcrowded cities and the rural districts where feeblemindedness is most to be found. "Birds of a feather flock together," and among the lower inefficient grades of society there will always be a tendency for people of feeble intelligence, weak will-power, slender sagacity, and deficient moral sense to mate and breed. The social environment is necessarily bad and unhygienic; consequently they are very prone to be affected by the race poisons—syphilis, alcohol, and tuberculosis—which tend to an increase of the bodily and mental deficiency in the next generation. In this way it is possible that these race poisons may tend to weed out poor types, but it is also probable that they tend to produce poor types.

It may be a biological heresy, but it is firmly rooted in the minds of practising physicians that a chronic saturation of the blood by the race poisons, specially when operating in successive generations, can *per se* cause degeneracy in healthy stocks by a pathological mutation of the germ plasm. Biologists may assert that one is assuming an acquired character can be inherited, and you must prove that the poison is not acting on the individual by reviving a latent neuropathic taint. I admit the great difficulties attending a proof that would satisfy some eminent authorities, still Galton himself admitted the possibility of continuous saturation of the blood by poisons modifying the germ plasm, and Professor Arthur Thomson in his work on heredity comes to this conclusion.

If we consider the matter from a physiological point of view it may be assumed that a chronic blood poisoning would disturb the biochemical interrelations of all the organs of the body, including the ductless glands and the sexual organs. It cannot be supposed that the continuous disturbance of the normal biochemical dynamics of so complex a mechanism can have no effect, after its operation in successive generations, upon the specific energy of the master tissues, germ cells and brain cells, seeing that they are supplied by the same blood and lymph as the rest of the organs and tissues of the body. My investigations of pedigrees of the insane and the feebleminded certainly support this conclusion. Many pedigree charts of defectives show a drunken mother or father, but particularly the former, with a family of healthy or comparatively healthy firstborn; then as the effects of the poison become intensified the later born children are either dying in infancy or mentally defective. Every effect owns a cause, and it seems as reasonable to attribute degeneracy to specific nutritional deficiency of the germ cells brought about by environmental agencies as to call it spontaneous variation. However, I have two pedigrees (Figs. 3 and 4) which are almost of the nature of an experiment which, so far as is possible, afford proof of my proposition. One relates to a woman who had two husbands, the other to two brothers who married two sisters.

Although higher-grade imbeciles are deficient in intellectual and moral qualities they are not deficient in animal propensities, and they are very fertile. Large families are the rule, but owing to the race poisons, maternal ignorance, and neglect, the infant mortality is proportionally high, so that the average number of surviving children attending the schools only exceeds by a trifle the average number in families in which all the children are in the normal schools.

CAUSES OF PSYCHOSES OR TRUE INSANITY.

Having thus given some consideration to the causes of mental defect and mental diseases with recognisable morphological defects or destruction of the organ of mind (amentia and dementia), I will pass on to the consideration of the causes of the true psychoses or disorders of mind, in which so far no adequate explanation by morphological changes in the brain exists.

The causes of these functional disorders fall into two groups: (1) the toxic, and (2) the degenerative (neuropathic), but, of course, the two conditions are more often than not combined. The toxic causes are (*a*) exogenous, and (*b*) endogenous. The field of inquiry concerning the latter (endogenous) compared with the former (exogenous) is beset with many difficulties, because the source and mode of introduction of poisons from without can be ascertained, whereas the genesis of the endogenous poisons is much more obscure and complicated by the general disturbance of the biochemical harmony of the physiological interrelations of the organs of the body. Indeed, many of the pathological conditions, bodily and mental, which arise from the introduction of poisons into the body, especially when they are taken habitually, are due not only to the poisons introduced from without, but to microbial poisons and the toxic products caused by disorders of alimentation, of metabolism and of inefficiency of elimination of waste products with the installation of a vicious circle.

Time does not permit of my dealing fully with the intoxication insanity brought about directly by alcohol and lead acting as principal factors. I may, however, remark that the characteristic true alcoholic psychosis (Korsakow psychosis), and regarded by Kraepelin as chronic delirium tremens, is not a common class of case in our asylums, and I have but seldom found cases in the post-mortem room. Alcoholic insanity is more often transitory and the cases are intercepted in the infirmaries. Although alcoholism plays an important part in the degeneracy of a stock, yet as the sole cause or even the principal cause of a large proportion of *admissions to asylums* I am very sceptical; indeed, I have brought forth a mass of evidence, clinical, pathological, and statistical, to show that a relatively small quantity of alcohol, the quantity which is taken daily by many physicians, magistrates, and pillars of society generally without any apparent harmful effects, is quite sufficient to make a potential lunatic or epileptic antisocial, and thereby necessitates segregation.

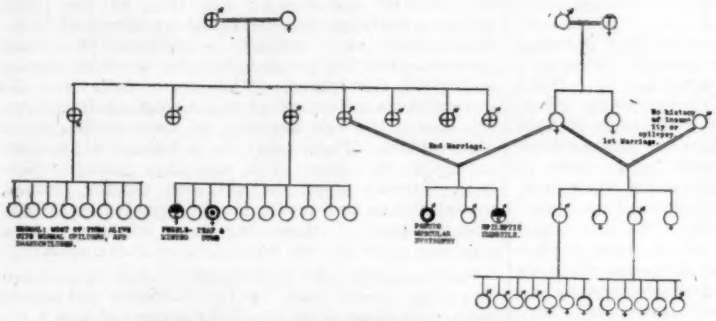
Neuropathic Inheritance.

I do not wish to imply that alcohol is not a potent evil to society, for I am in entire agreement with Sullivan's conclusion in his work on "Alcoholism."

"To sum up, then, we find that the extent of the alcoholic evil is represented by a considerable contribution to the amount of suicide; by a share in the causation of crime, which though small in relation to the total mass of delinquency, is of extreme importance by reason of the specially grave character of the offences comprised in it; by a comparatively small part in the causation of insanity; and, lastly, by an indefinite but certainly considerable influence in the production of impaired development which underlies the perverted conduct of the socially unadaptable classes."

Every practitioner knows of individuals born of sound stocks that no acquired conditions (which are usually assumed to be the cause of insanity) can render permanently insane—for example, head injury, exhaustion from worry and overwork, sexual excesses, emotional shocks, deprivation, destitution, syphilis, alcoholism, microbial infections, auto-intoxications, diseases of disordered metabolism, and toxic conditions arising from inefficient elimination of waste products. Delirium may be the result of many such conditions, and this may persist for some time until the cause is removed; then the patient recovers sooner or later his normal mentality. Should, however, there be a neuropathic inheritance any of these causes, single or combined, may lead to a temporary or even permanent derangement. Indeed, we know that there frequently occur members of a neuropathic stock whose mental equilibrium may be disturbed without the occurrence of any one of these conditions, even without any apparent cause; except it be assumed that there is a disturbance of the normal physiological processes concerned with the functions of reproduction and occurring especially at the critical periods of life—namely, early adolescence and the involutional period, and also in the female during the puerperium, parturition, and lactation.

FIG. 3.



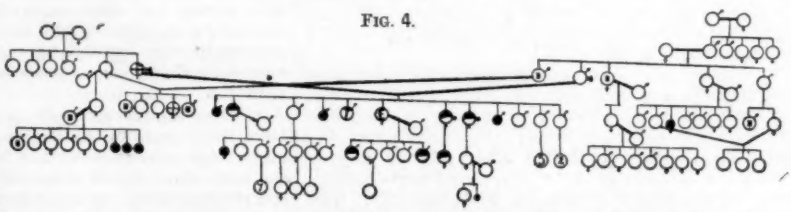
This pedigree relates to a woman with two families. By her first husband, with no history of the neuropathic taint in his family, she has healthy children and grandchildren, many of whom are grown up. She then married a man who was a drunkard, one of a family of drunkards; his father was a drunkard. One of his brothers, a drunkard, had ten children, and of these one was deaf and dumb and another an imbecile, otherwise there was nothing in the family indicating a hereditary taint. The offspring of this woman by the second husband were as follows: a boy with pseudo-muscular dystrophy, a normal boy, and a feeble-minded epileptic imbecile. A glance at the pedigree seems undoubtedly to show that the father's germ plasm was accountable for these defects, and drink in successive generations the probable cause.

EVIDENCE OF ANTEDATING.

From these facts it may be deduced that the neuropathic inheritance and disorders of the functions of the sexual glands play a dominant part in the causation of the true insanities. For years past I have been studying the neuropathic inheritance by means of pedigrees made by myself and collaborators, also by means of the card system of a collective investigation of nearly 4000 relatives who are at present in or have been discharged from, or who have died in the London County Asylums, and I have observed that there is, as this graph shows, a marked correlation between the age at onset of insanity and the critical periods of sexual life. In the insane parents of insane offspring you will observe that the maximum is at the involutional period of life, in the offspring it is at the adolescent period, under 25.

This evidence of anticipation by statistical methods was commented upon by Professor Karl Pearson in a letter written to *Nature* on Nov. 12th, 1912, entitled "On an Apparent Fallacy in the Statistical Treatment of Antedating in the Inheritance of Pathological Conditions." He criticises my statistics on mathematical grounds, but I do not regard this as a question of mathematics, but one of observed facts and experience. When Sir George Savage with his vast experience says this accords with his views, and when we find that other distinguished alienists have noted this anticipation it seems to me not the question of biometrics at all. I will quote from a very able French writer: "C'est d'abord l'hérédité vésanique, et l'on a signalé de nombreux exemples montrant que les enfants d'un aliéné non seulement etaient prédisposés à devenir aliénés à leur tour, mais encore entraient souvent

FIG. 4.



This pedigree is of interest in showing the marriage of two brothers with two sisters. In the first instance the male suffered with heart affection, which was transmitted to the offspring. In the second case the female suffered from cirrhosis of the liver and paraplegia, and was probably alcoholic and possibly syphilitic. The result was three insane and one epileptic offspring. From the first insane daughter the issue was probably unaffected; but from the next daughter, who had masked epilepsy, of five children born two were insane. The next two insane daughters each gave birth to an illegitimate child by the same father; one of these children became insane at adolescence, whereas the other has married, and has an apparently healthy child. H denotes heart affection; plain circles, healthy; circles in quadrants, alcoholic; half black circles, insane; small black circles, died in infancy or born dead.

dans la folie à un âge plus jeune que leur père par une sorte d'accumulation."

Now, granting that Professor Pearson's conclusions are right and that my statistics show no antedating, I would remark that numbers of pedigrees which have been taken by myself and independent observers show this tendency in successive generations for the insanity to occur at an earlier age in an insane stock. Professor Pearson in one way does not deny the fact that there is a tendency for an insane stock to be either ended or mended, which is really the practical point which we have to decide, for he says: "In the case of insanity is the man or woman that develops insanity at an earlier age as likely to become a parent who develops it at a later age? I think there is not a doubt as to the answer to be given. Those who become insane before 25, even if they recover, are far less likely to become parents than those who become insane at later ages; many of them, considering the high death-rate of the insane, will die before they can become parents of families." But the objection which Professor Pearson raised does not apply, it seems to me, when a comparison is made between the age at onset of insane offspring of insane parents with all the admissions to the asylums, and a graph can be constructed very similar in many respects to that obtained when the comparison of offspring and parents is made.

HISTOLOGICAL CHANGES IN THE OVARIES IN DEMENTIA PRÆCOX.

Now, it is an interesting fact that in certain types of insanity, especially the primary dementia of adolescence, there occur in quite young females a great diminution of ova, signs of absence of maturation of the ova, and marked fibrosis of the gland. I consider this to be further evidence of "anticipation," by which the children of insane parents are affected at a much earlier age than the parents and in a more intense form. Dr. Laura Forster has been working in the laboratory at Claybury for the past two years on the histology of the ovaries of 100 cases of females suffering from different forms of insanity and dying during the child-bearing period of life. Her observations strongly support the view I have put forward regarding the early involution change of the ovaries in dementia of adolescence.

The observations of Ceni support the conclusion that there is a close functional correlation between the brain and the reproductive organs. He removed one hemisphere from hens; the birds surviving traumatic shock were killed after periods varying from a few months to three years, and their ovaries were subsequently examined histologically. The primary shock had the effect of causing them to cease laying eggs for a few months. In the following year they began to lay again, but in the second year fewer eggs were laid or they ceased altogether from laying. The birds were otherwise healthy. Microscopic investigation of the ovaries showed a premature progressive involution. Ceni infers from these experiments that intimate dynamic relations exist between the brain and the reproductive glands. It is more difficult to show changes in the male sexual organ, and at present an investigation is being made. The masturbation which so frequently occurs may interfere with the results.

PSYCHO-PHYSIOLOGY OF THE SEXUAL GLANDS AND BRAIN.

Now let us regard the question from a psycho-physiological aspect. In the insanity of adolescence are the brain and sexual glands simultaneously functionally disordered, or is the deficiency and disorder of the one the cause of the derangement of the other? It has long been recognised by alienists that the primary dementia of adolescence may arise from an auto-intoxication possibly of sexual origin. In women it coincides with menstrual disorders. The reality of the auto-intoxications is demonstrated by vaso-motor disturbances, febrile attacks, digestive troubles, furred tongue, nausea, and pyrosis, which frequently occur at the period of onset of the attack; but this, to my mind, explains nothing, because these symptoms of auto-intoxication are common conditions in insane persons. But let us consider the question from a biological standpoint. The germ cells are the transmitters, not merely of morphological characters, but also of the raw material of mental characters of ancestors. There may be a failure of specific energy of the germ cells, and this dynamic deficiency shows itself in the two master tissues, sexual glands and brain, at the time when all the latent energy of these organs is stimulated to a supreme effort for the reproduction of the species.

Biochemistry and physiological experiments are throwing a new light on the intimate and subtle functional association of all the organs of the body brought about by the internal secretions or hormones, specially those of the ductless glands, which we know play an important rôle in the metabolism, growth, and functional activity of the central nervous system. In proof of this I need only mention the known facts concerning the thyroid glands and their absence in relation to cretinism and myxœdema, and of hypothyroidism and hyperthyroidism in relation to certain nervous and mental disorders especially affecting women. Again, there are certain forms of disease of the pituitary body which are associated with abnormalities of the sexual organs; besides there are other facts based upon clinical observation and experiment showing the correlation of function between the sexual glands and the pituitary body which I need not dwell upon here, but they suffice to support the view that hormones produced by the sexual glands may serve, not only to excite the growth of the secondary morphological sexual characters, but to arouse in the central nervous system the vague instinctive desire connected with the sexual appetite.

All the higher as well as the baser sentiments have their roots in the desire for propagation even more than preservation, for Nature is unmindful of the individual, mindful only of the species. Painting, sculpture, poetry, music, literature, and the drama owe their inspiration and fervour to the sexual passion, yet social conditions, traditions, and customs conspire to throw a veil over the tree of life, the openly expressed knowledge of which has been regarded as forbidden fruit. Modern social conditions tend to repress or suppress the natural physiological gratification of the sexual passion, especially in women. When this happens the *desire* is not suppressed, but causes a silent undercurrent of sexual passion which, although it may not be manifest to the external world, nevertheless occupies a large place in the conscious and subconscious self; it suffuses silent thought and consciousness with an emotional tone which may find outward expression in æsthetic or religious observances or fanatical agitation; its suppression is one of the causes of insanity, especially in subjects with the neuropathic taint, for it tends to continued

mental depression and the instatement of an anxiety-neurosis which in its turn leads to a disorder of the vital functions and a disturbance of the biochemical relations of the whole body; causing an auto-intoxication; thus a vicious circle may be established by the interaction of a disordered mind and a disordered body.

Evolution of Character in Man.

The raw material of character possessed by every individual is a complex of the characters derived from species and sex—the outcome of evolution, and fixed and organised by heredity, but modified by special racial and family traits. All stable foundations of character have their roots in the desires, emotions, and instincts connected with preservation of the individual and the species, but modified in accordance with the functional and bodily differences of the two sexes. They are the oldest phylogenetically and ontogenetically; they are common to all human beings, and are the main source of all human activities. This fact has been poetically expressed by Schiller in the following lines:—

Durch Hunger und durch Liebe
Erhält sich die Weltgetriebe.

The special racial and family characters are of later development, therefore are less fixed, stable, and organised in the nervous system, consequently are more liable to mutation.

The last to come are the family characters, which are most subject to mutation and therefore most influenced by adaptation to environment and sexual selection in the struggle for existence. The character of the civilised man, which places him above the primitive savage, is mainly due to racial and family characters which by the evolution of language and the use of the hand as an instrument of the mind have built up the great social heritage which he utilises in the preservation of the individual and the species. Occasionally, for no known reason except atavism, we find an idiot born of intellectual parents. As there is no danger of propagation it does not much matter. In the feebleminded, like the savage, the animal propensities constituting the roots and stem of the tree of life are vigorous for propagation; but the fruits, intellectual and moral, do not ripen sufficiently to be of any productive value; consequently, like weeds, they tend to use up nutrition, materially despoiling the fruitful trees and contaminating the social heritage. The constantly expanding social mind colours the hallucinations, delusions, illusions, obsessions, and phobias of the insane civilised human being, thereby obscuring the real source of the mental disorder, which lies deep down in the roots of character, connected with a germinal inborn failure of the harmonious interrelation of the biochemical processes of organs, the normal functioning of which is indispensable for the appetites, desires, instincts, and emotions associated with reproduction.

Insanity among Primitive Peoples: Dementia Præcox.

In primitive and semi-primitive people the animal instincts and passions naturally stand out in relief. Their ideas are limited to concrete sensations, and when they suffer with obsessions they are sensory in character. They are often particularly liable to hypnotic conditions and suggestion; owing to a lack of highest control and an environment of mysticism, superstition, and witchcraft, the fear of natural phenomena, which they cannot explain, enters largely into their mentality. P. C. J. van Brero, who has had a long experience at Lawang Asylum, Java, points out the difficulties of obtaining information regarding the prevalence of different forms of insanity among primitive and semi-primitive peoples, and of appraising the value of such accounts as exist by various writers, owing to their using a different nomenclature. Nevertheless, it appears that they suffer, although to a less extent and with a different colouring, the same forms of insanity, and apparently the primary dementia of adolescence, dementia præcox, is the commonest form.

Among these people it cannot be an effect of the non-gratification of the sexual instincts, owing to failure of opportunity occasioned by social conditions; yet its appearance in individuals in early adolescence, who up to the time of puberty were normal, points to some intimate relation of the disease to the sexual functions. We know that this form of insanity is evidence in most cases of an ancestral neuropathic taint. In a large proportion of the cases of insane parents and offspring which I have collected I find the offspring are suffering with this form of insanity. In 80 per cent. of the cases of dementia præcox the onset occurs before 25. In cases where there are two or more members of the same co-fraternity suffering with insanity it is nearly always this form of insanity of adolescence, and it frequently terminates in dementia. It is noteworthy, too, that in a large proportion of cases the age of onset of the offspring of insane parents is the same or within a few years of the same. This corresponds to family nervous diseases. The sexes are about equally affected. Over-pressure at school and college is often (I think erroneously) attributed as the essential cause of the disease, although I do not deny there is not infrequently a history of such over-pressure. Again, masturbation is very common, so much so that it is thought to be the cause of the onset of the disease and of the anergic stupor that so commonly occurs in these cases, but it is more probable that this is a sign of the disease and not a cause.

Now it is very interesting to note that up to the time of puberty the majority of patients affected by dementia præcox have been intelligent individuals and full of promise. Aschaffenburg, cited by Christain, gives the following proportion per cent. of dementia præcox: 27 men and 21 women were of an average intelligence prior to the onset; 55 males and 66 females were intellectually good and even remarkable; 18 males and 13 females presented a psychic development below the average without, however, being idiots or imbeciles. These and other statistics tend to show that there is not a congenital feeblemindedness but some germinal defect, possibly of durability of the sexual glands, which has a profound influence on the function of the brain, causing at first mental disorder, and lastly dementia. Had time permitted I should have liked to say something regarding maniacal-depressive insanity and involutional melancholia.

Every case of insanity should be regarded as a biological problem, and it can only be solved by a full consideration of what the individual was born with and what has happened after birth.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL.—Dr. Wyatt Wingrave will deliver a lecture on Cerebro-spinal Fluid—Normal and Morbid, at 3 P.M. on Friday, July 17th, at this hospital, Gray's Inn-road, W.C.

THE TREATMENT OF ANKYLOSTOMA ANÆMIA.

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With a Note by

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ON taking over charge of the medical wards in the large Cairo Hospital of Kasr-el-Ainy some years ago I was struck by the varying and often disappointing results of treatment in the large number of cases of ankylostomiasis admitted, which approach 400 annually. Since the outstanding symptom of this disease is anæmia, I instituted regular blood examinations in each case to test the efficacy of the treatment adopted.

My observations are based on a study of over 300 cases. These all represent patients severely ill with ankylostomiasis and not simply harbourers of the parasite or cases of ankylostoma infection, to follow the distinction made by Boycott.[1] So long as no serious degree of anæmia is present the average Egyptian peasant (fellah) is usually able to continue work and does not apply for hospital treatment unless suffering from some other disease. A fall of hæmoglobin below 50 per cent., however, is a serious handicap on exertion, but the fellah generally delays until he is entirely incapacitated before journeying to hospital. Thus I found in my series that the average hæmoglobin value on entry was only 22 per cent., and in one-fifth it did not exceed 10 per cent. That patients can get about with such intense anæmia must be ascribed to the increase of blood volume described by Haldane, so that the total deficiency of hæmoglobin is considerably less than appears. The average colour index was reduced to 0·4. I have never yet seen a case of ankylostomiasis in which the high colour index typical of pernicious anæmia was approached, though instances have been reported.[2] For the hæmoglobin estimation I at first employed Oliver's instrument and his daylight reading scales, but I now use Talquist's simple method, which is sufficiently accurate and time-saving.

Long before the parasitic cause of endemic anæmia was discovered patients were treated with iron in the hope of benefiting this chlorotic type of anæmia. Dock and Bass[3] narrate instances from the Southern States where decided, though only temporary, improvement resulted. In my series I have only met with one case of pure ankylostomiasis in which a slight improvement did follow the administration of iron before any worms were expelled. (Chart VI.) This failure may be due to the severity and long duration of the anæmia in hospital patients. Yet cases of severe secondary anæmia due to loss of blood in bilharziasis commonly show decided improvement on hæmatinic treatment, although the hæmorrhage from bladder and intestine can rarely be arrested. However, rest in bed and attention to diet probably do much to relieve the drain on the system and to enable the bone marrow to make good the loss. From the point of clinical diagnosis it may be stated that a marked anæmia dependent on no obvious cause, and which resists hæmatinics, is almost invariably due to ankylostomiasis in this country. The successful treatment of such patients depends primarily on a correct diagnosis and the expulsion of the ankylostoma worms. In every case of anæmia the stools are examined for ova by the microscope, and if none be found a culture is made and the result noted after an incubation of five days at summer temperature to obtain developed larvæ. When time is important the centrifuge method described by Dock and Bass for isolating ova from stools may be used. Examination of the blood for eosinophilia is of little value in this country where all forms of helminthiasis are rife. The choice of anthelmintic, the dosage, and the method of administration vary with different physicians. The careful work of Schüffner and Vervoort[3] on a large scale at Delhi gave the following results for a single administration, and is in harmony with the experience of most other workers:—

Drug.	Dose.	How given.	Worms expelled.
	grm.		Per cent.
Thymol.	5	One gramme two-hourly. Followed by castor oil.	83
Beta naphthol.	3	As above.	68
	4	As above.	74
Eucalyptus.	3	Mixture. In two portions at interval of half an hour.	38
Chloroform.	3·5		
Castor oil.	40		
Oleum chenopodii.	3	In three doses of 16 drops on sugar every two hours. Followed by castor oil 17 grm. with chloroform 3 grm.	91
Oleum chenopodii.	3	As above, but without castor oil and chloroform.	84

Personally I generally use a mixture of thymol (3 to 4 grm.) with beta naphthol (3 grm.). The addition of beta naphthol reduces the dose of thymol necessary and ensures a thorough breaking up of the crystals, which often tend to pack together in the cachets. Oleum chenopodii is expensive and has a peculiarly disagreeable flavour, most repulsive to patients, so I have not persevered with its use.

Whatever drug be chosen as vermicide, a preliminary preparation of the patient by fasting and purgation is strongly advisable. The usual course consists of milk diet for one day, with a saline purge in the evening in order to free the upper intestinal tract from food and mucus and so expose the worms, which often lie buried. The vermicide is then given early the next morning on an empty stomach in divided doses and the drug swept out by a second purge two hours after the last dose. Until this is finished the patient is kept in bed.

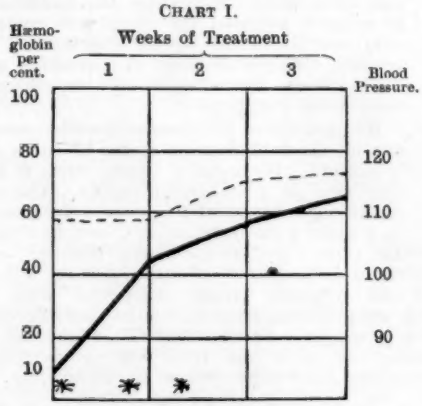
In order to free the intestine of the worms it is usually necessary to repeat the vermicide, often several times. Ashford and King at Porto Rico found two courses generally sufficient; Sandwith in Egypt averaged 2·6; and Dock and Bass found over three courses necessary in half their patients. It is advisable to allow from four to seven days to elapse before the treatment is repeated. Personally I prefer the shorter interval, as it favours a cumulative effect of the drug on the worms. When practicable the stools are examined for the worms expelled after each course, and when no more are forthcoming a microscopical search for ova is made to see if any (female) worms remain. This should be deferred until some days after vermicidal treatment, since the drug may temporarily disable the egg-laying capacity of worms without killing them. Since it is more important to know whether worms remain than the number of those discharged, I

consider this search imperative and cultivate the stools whenever possible, to obtain a certain result. When the worms prove resistant to one vermicide, it is advisable to employ an alternative drug.

Expulsion of the worms is followed by gradual disappearance of the anæmia in most cases of ankylostomiasis. The rise of hæmoglobin is more often irregular than uniform, depending on the proportion of worms got rid of by successive doses of vermicide. A decided improvement is commonly seen after the second dose; for if a patient has 300 worms, for example, 200 of which are expelled by the initial dose, the 100 that remain are generally sufficient to maintain the anæmia. As a rule, a rise in the number of red corpuscles precedes the rise of hæmoglobin, and the number of corpuscles reaches normal long before the hæmoglobin standard is attained. This response to anthelmintic treatment occurs readily in young and vigorous subjects recently infected. But in the severe chronic cases that form the majority of hospital in-patients, satisfactory improvement may not occur or may be delayed for some months. Hence the patient is not conscious of any benefit accruing from his stay in hospital, and, owing to the liability of reinfection after discharge, may be none the better for the treatment.

In order to obtain a rapid cure of the anæmia in moderate cases, and to get any decided improvement in severe cases, hæmatinic treatment is generally essential. Since the anæmia is of a marked chlorotic type the administration of iron is strongly indicated to supply the deficiency of hæmoglobin. Under the influence of iron a rapid amelioration is usually seen, even in patients with severe anæmia, and before all the worms are expelled. There is generally an immediate rise in hæmoglobin value of from 20 to 30 per cent. in the first week, and a slower increase later. A typical case is here shown (Chart I.).

CHART I.

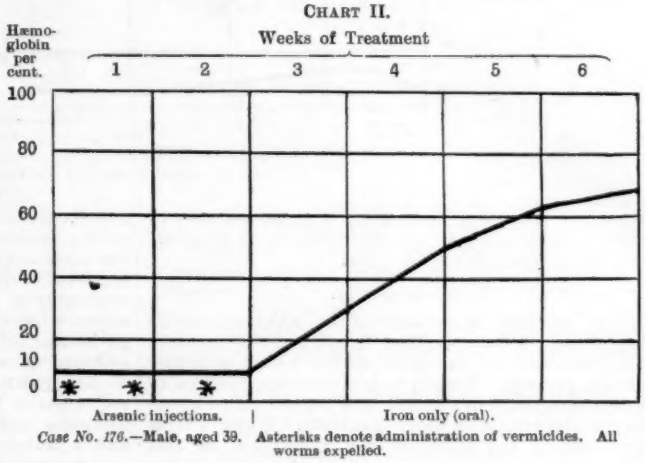


Case No. 232.—Male aged 20. Rapid rise of hæmoglobin (thick line) followed by rise of blood pressure (dotted line). Asterisks indicate administration of vermicide.

In young subjects with vigorous bone marrow the transformation in appearance is startling. In one such patient a single dose of thymol and the administration of reduced iron raised the hæmoglobin value from 10 to 60 per cent. in one week. This increase may be partly explained by a rapid reduction of the hydræmia shown to exist by Haldane, with concentration of the blood elements. But the rise of hæmoglobin in such cases treated with iron is proportionally greater than the rise in the number of red corpuscles, so that the colour index rises quickly, pointing to a high degree of activity on the part of the bone marrow. This is rarely seen when iron is withheld, the colour index remaining low for a long time.

Chart II. shows the usual result of withholding

CHART II.



Case No. 176.—Male, aged 39. Asterisks denote administration of vermicides. All worms expelled.

iron in a severe case. Although all the worms had been expelled and arsenic given, no rise of hæmoglobin occurred until iron was substituted, when the response was immediate.

An interesting case is shown in Chart III. Here iron and arsenic were given at first for just three days, with immediate benefit, but were afterwards omitted. In spite of the complete expulsion of worms the hæmoglobin value actually sank, but rose again rapidly as soon as hæmatinic treatment was resumed.

When iron is given from the first, any rise in hæmoglobin value is a most useful guide to the expulsion of the worms. A halt on the upward curve generally means that worms still remain and that further anthelmintic treatment is necessary as shown in Chart IV.

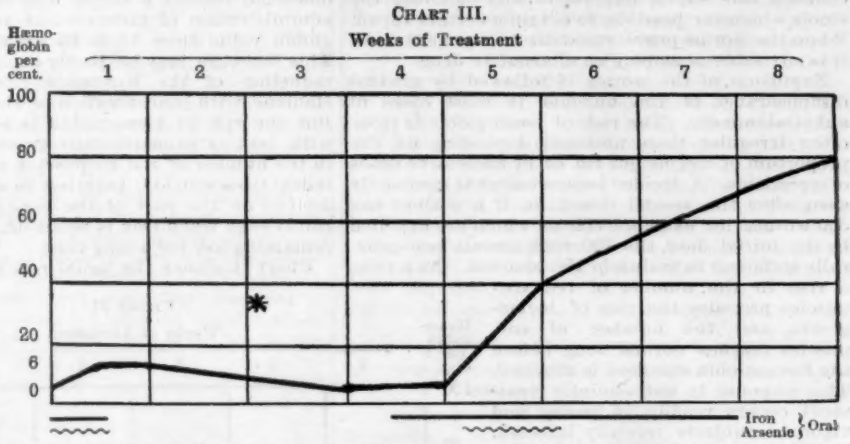
Methods of giving Iron.

The organism quickly responds to iron as a rule, and the form in which it is presented makes but little difference. Comparative tests in my series showed that the stronger forms are well taken and give the most satisfactory results. Thus reduced iron, ferric perchloride, and ferrous sulphate yield an average hæmoglobin increase of from 9 to 13 per cent. weekly, the difference depending largely on individual powers of recuperance. The carbonate of iron (Blaud pills) and the ammonio-citrate are slightly inferior in action, perhaps owing to their styptic properties.

Organic compounds present no advantages over the simple forms of iron. Preparations of hæmoglobin are generally useless; any improvement that may occur under their administration would

seem to occur equally well without. Manganese is similarly ineffective as in chlorosis.[4] By the courtesy of Dr. J. Lyn Dimond[5] and of Messrs. Oppenheimer, of London, I was enabled to test a colloid preparation of iron. This was ineffective in the very small doses that can ordinarily be given hypodermically, although large doses like those of citrate have some effect. However, since oral medication is so satisfactory in ankylostoma anæmia, special methods of administration of iron are uncalled for.

CHART III.

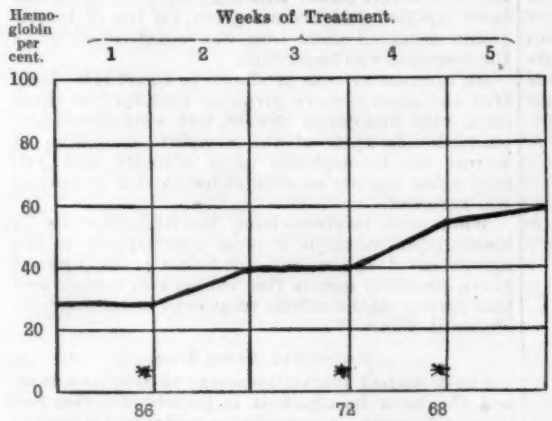


Case No. 211.—Male, aged 25, severely ill with much œdema but no albuminuria. Asterisk shows date of complete expulsion of worms. Lines below denote administration of hæmatinics.

Eosinophilia.

The anæmia characteristic of ankylostomiasis has already been described briefly; a few remarks may be added on the eosinophilia which is nearly always present. This is a characteristic feature of worm infections in general, and occurs in response to the absorption of their products. When worms live free in the intestine the absorption of this material by their host is often small, and eosinophilia may be slight. But when the worms live in the tissues of the host (e.g., trichiniasis, bilharziasis) the absorption is much greater and the eosinophilia pronounced. It then varies directly with the number of living worms present, and inversely with the degree of anæmia existing at any time.[6] In ankylostomiasis, when the worms are settled in the intestine, their relation to the host is intermediate between these two classes. There is usually a high eosinophilia in the early weeks of infection, which falls when the responsive powers of the marrow are impaired by chronic anæmia. On treatment by vermicides the eosinophilia, if high, falls with expulsion of the worms; but if the eosinophilia be low it may increase when the anæmia improves. Thus in many cases the eosinophilia may fall at first following expulsion of worms and rise again later owing to the improved reaction of the marrow to any that remain. Persistent eosinophilia lasting for months or years after the complete expulsion of worms is not uncommon, and is probably due to the presence of larvæ from dermal infection, which may remain for years arrested or wandering in the tissues, and never reach the intestine.

CHART IV.



Case No. 39.—Male, aged 35. Asterisks denote administration of vermicide; the figures give the pulse-rate. At the end of the second week ova were still found in the stools.

Other Symptoms.

The rapid improvement in the blood condition brought about by successful treatment is followed by a disappearance of the various subjective symptoms, such as headache neuralgic and joint pains, palpitation, and epigastric pain. But while the anæmia may be quickly relieved the symptoms commonly continue for some weeks afterwards. Such organic changes as fatty degeneration of the heart muscle, for instance, take months rather than weeks for recovery.

My assistant, Dr. Garas, kindly estimated the blood pressure in a series of cases under treatment. He found a distinct rise to follow the rise in hæmoglobin value (Chart I.). Another good sign of progress is the reduction in a rapid pulse-rate, as is shown in Chart IV. In cases of "ankylostoma kidney," where there is profound anæmia, general anasarca, and deficient urinary excretion with little or no albuminuria, striking results may be obtained. Such a case is seen in Chart III., where the daily amount of urine rose from 500 c.c. to 5000 c.c. during the rapid improvement in the anæmia.

Refractory Cases.

In a certain proportion of chronic cases of ankylostomiasis which have undergone the routine treatment by vermicides and iron improvement may be wholly absent or may be only partial. A somewhat slow rise of hæmoglobin to about

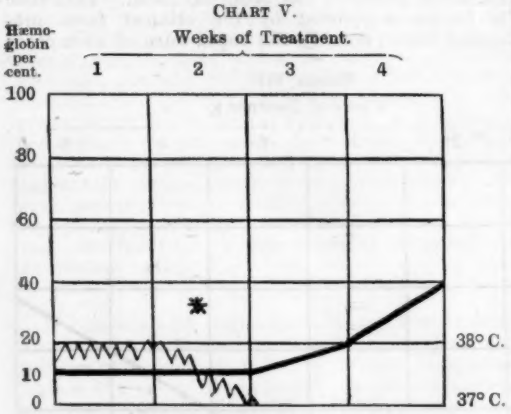
50 per cent. is often obtained with no subsequent improvement. The causes of total or partial failure generally come under the following heads:—

(*a*) *Persistence of worms.*—After worms have been expelled, their non-appearance in the stools after repeated doses of vermicide is no proof of a complete clearance. Careful examinations of the stools for ova, as already described, are necessary to make certain. A few male worms may of course escape detection, or there may be immature forms resulting from dermal infection arrested in the tissues, but it is tolerably certain that these are unproductive of anæmia.

(*b*) *Complicating diseases.*—Of these, chronic diarrhœa (generally due to intestinal bilharziasis) and parenchymatous nephritis are, in this country, the most serious complications that aggravate anæmia. The constant drain on the system is not sufficiently relieved by the removal of ankylostoma worms to permit of a good recovery. Pellagra, endemic cirrhosis (Egyptian splenomegaly), and bilharziasis commonly complicate ankylostomiasis in Egypt, but do not retard recovery unless they have reached a very advanced stage.

(*c*) *Fever.*—So long as there is fever rising over 100° F. from any cause the administration of hæmatinics is powerless to affect the anæmia. In some cases the fever is due to a specific cause such as malaria, while in others it appears due to secondary infection at the sites of bites in the intestine. This latter variety seems relatively more common in children, and is best treated by anthelmintics. So soon as the fever subsides a satisfactory improvement is the rule, as shown below.

CHART V.



Case No. 107.—Male, aged 19. Persistent anæmia in spite of treatment until fall of temperature. Asterisk denotes date of complete expulsion of worms.

In severe cases of ankylostomiasis the weakened state of the patient may prevent a febrile reaction, and a terminal septicæmia be obscured. The only sign may be a polynuclear leucocytosis, generally with absence of eosinophiles, as in a recent fatal case where the leucocytes averaged 17,000 to 20,000, while the number of red corpuscles sank from 1,570,000 to 976,000 in the course of the last fortnight. In such cases death may occur after all the worms have been expelled.

(*d*) But in the majority of cases of severe anæmia which show little or no improvement at all after complete expulsion of ankylostoma worms the above causes of failure can be excluded. Frequently these patients have comparatively few worms present, so that absorption of a toxin produced by the worms cannot explain an anæmia persisting after their removal. The theory of hæmolysis due to a secondary bacterial infection at the sites of the bites rests on no secure foundation of clinical or post-mortem evidence,[7 8] and the blood changes are essentially different in nature and progress from those characteristic of pernicious anæmia. In this connexion the condition of the hæmopoietic system is of fundamental importance, and I am greatly indebted to my colleague, Professor Ferguson, for the following statement.

Note by PROFESSOR FERGUSON.

"The bone marrow of the body exhibits, during the period covered by the earlier stages of ankylostoma infection, a notable degree of erythroblastic and leucoblastic activity. This can, as a general rule, be observed to extend into the marrow of the long bones, and it undoubtedly occurs, though probably it is of shorter duration, in cases of very severe infection. The marrow of the femur shaft becomes transformed into a compact, firm, solid tissue of brownish-red colour throughout the length of the medullary cavity. Little or no trace of the marrow fat is in many cases visible. Examined microscopically, this hyperplastic marrow is specially rich in normoblasts and eosinophiles, examples of active mitosis being frequently observed in the latter class of cell. The marrow eosinophiles at the beginning of this phase of activity are well formed and highly charged with characteristic granules.

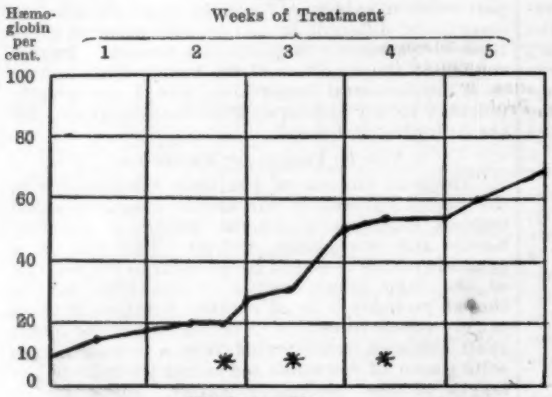
"The period of this hyperplastic phase is difficult to determine. Evidence is not wanting to show that in cases of moderate severity it may persist for a considerable time. But in severe cases sooner or later it gradually passes off, the marrow becoming paler, and finally reaching a condition of gelatinous atrophy. This decline in myelic activity is apparent first of all in the long bones, but later also in the ribs. At this latter stage the precursors of the red cells and the eosinophiles are notably reduced. A feature of significance in connexion with the latter is that, with an imperfectly lobulated nucleus, their cytoplasm is very insufficiently supplied with eosinophilic granules. We are fairly warranted in regarding such a condition of the marrow as one of exhaustion, and while regeneration is yet actually possible, a very considerable time will be required for its realisation. It is significant in this connexion that the blood in chronic severe cases of ankylostomiasis frequently contains eosinophile cells of imperfectly matured type and scanty granular content, comparable in all respects to those described above as existing in the marrow."

Clinical Observations.

The condition of the bone marrow determines the rate and degree of recovery from the anæmia when the cause (i.e., the ankylostomes) has been removed. In moderate cases, when the marrow is hypertrophied, recovery follows promptly under the administration of iron, more slowly when iron is only obtainable from the food. When the marrow itself becomes impoverished by anæmia, and the active phase has reached its decline, the response to such treatment is slower and generally imperfect, although the actual degree of anæmia present may be no greater. The rise in hæmoglobin value is limited and may halt when a percentage of from 40 to 60 is reached, although every worm has been

expelled and no complications are present. Under these circumstances the stimulating influence of arsenic on the bone marrow is invaluable, as is shown in the subsequent charts.

CHART VI.



Case No. 305.—Boy, aged 14. Asterisks denote administrations of vermicide. Shows rise of hæmoglobin before expulsion of the worms (exceptional). Distinctive rises after first two doses which expelled all the worms. Final rise due to arsenic.

Arsenic by itself, in this form of chlorotic anæmia, does not increase the percentage of hæmoglobin unless iron be supplied. (Chart II.) In the early stages of recovery from moderate anæmia the rate of progress under treatment by iron is unaffected by the addition of arsenic, but later the effect of the combined action is apparent, giving a well-sustained rise of hæmoglobin to a higher degree. Thus, in two series of cases, the first, treated by ferric perchloride alone, showed an average weekly increase of 12·8 per cent. hæmoglobin. The second series, in which solution of arsenic was added to the iron mixture, showed an average increase of 14·3 per cent., the difference being due to a better degree of improvement in the later weeks of treatment.

In the severest cases of ankylostomiasis, when the bone marrow is atrophied, arsenic is essential to recovery. Clinically, these patients exhibit a grave degree of anæmia (under 20 per cent. hæmoglobin), with often but few worms present. Apparently the worms fail to obtain sufficient nourishment from the exhausted tissues and are starved out. Thus, in the severe case illustrated below (Chart VII.) only 16 worms were obtained from the intestine. The blood reflects the condition of the depleted marrow. The red corpuscles are greatly reduced in number and exhibit marked poikilocytosis and metachromophilia with the appearance of a few normoblasts. Instances of a pernicious type of anæmia have been reported, but I have never found the colour index high nor megaloblasts present. However, when the worms have been expelled and the anæmia somewhat improved by treatment the colour index may be raised to unity, the rise in hæmoglobin value being greater than the increase in number of red corpuscles. The leucocytes seldom show any alteration in total numbers or marked qualitative changes, except a low degree of eosinophilia in most cases. In these severe cases arsenic acts very much better when given hypodermically.

I have obtained excellent results from the use of moderate hypodermic doses of sodium arsenate, cacodylate and neo-cacodylate respectively, but prefer the organic forms as being less toxic. As already mentioned, it is necessary to give iron at the same time. (See Charts II. and VIII.) Under the combined treatment the rise of hæmoglobin is relatively greater than the rise in number of red corpuscles, so that the colour index soon approaches unity.

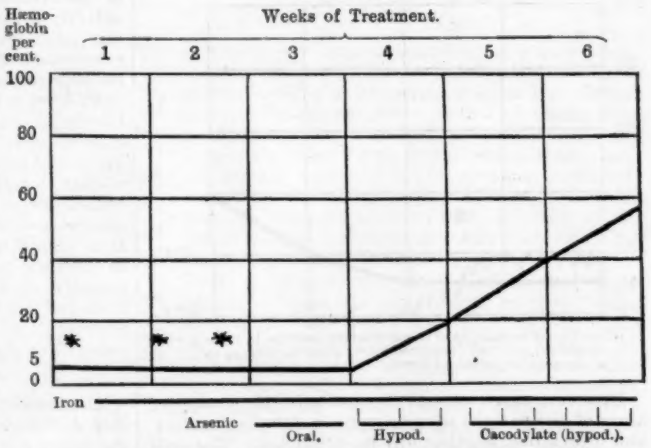
The combination of iron with arsenic in forms suitable for hypodermic medication—e.g., iron arsenate or iron cacodylate—does not contain enough iron to give a rapid result. This is well seen in Chart VIII.

Conclusions.

In this record of clinical results there is little need to enter into the somewhat vexed question of the actual factors that cause the anæmia of ankylostomiasis. This has been well summarised by Boycott in his Milroy lectures, and the recent work of W. Nicoll[6] supports the view that actual loss of blood by hæmorrhage from the intestinal bites is the main cause of the anæmia.

To account for a severe anæmia in cases of ankylostomiasis, where the number of worms present is small, the theory of hæmolysis from secondary bacterial infection has been advanced. This view is hardly supported by the clinical facts presented above, notably the rapid cure of such cases by expulsion of the worms aided by hæmatinic treatment. Septic infection of the intestinal tract, such as occurs in typhoid fever and dysentery, is not specially productive of anæmia. But in the stomach and upper part of the small intestine septic diseases are certainly associated with marked anæmia. Thus a conspicuous feature of cancer of the stomach and upper intestine is a progressive anæmia of a

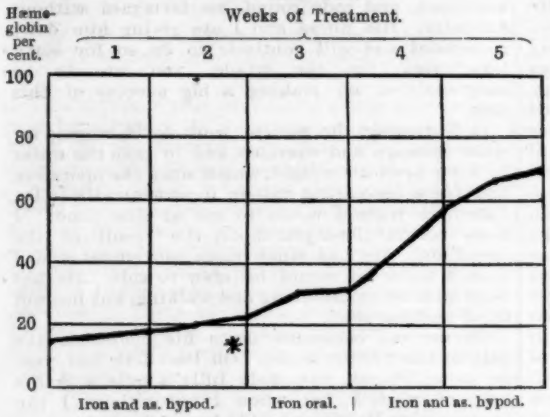
CHART VII.



Case No. 273.—Male, aged 48. Asterisks denote administration of vermicides. No ova found in stools after last dose. Lines beneath chart show hæmatinic treatment adopted.

secondary type. The work of Ashby[10] and others has shown that the organism normally absorbs iron from the food only in the upper part of the small intestine. This fact may account for the striking development of anæmia when the functions of this part of the intestine are disturbed by the septic inflammation consequent on ankylostoma infection or malignant disease. The bone-marrow is thus deprived of the free supply of iron necessary to replace the hæmoglobin lost by hæmorrhage, and the colour index is depressed. For it is a time-honoured maxim in the treatment of chlorosis and other forms of anæmia that catarrh of the digestive tract must be corrected before iron can produce its therapeutic effect. Hence removal of the inflammation caused by the presence of ankylostoma worms is a necessary preliminary to successful hæmatinic treatment. It is in this way that I believe bacterial action aggravates the anæmia of ankylostomiasis. In such severe cases as seen in Chart III. the ready response of the marrow to arsenic and iron shows that its function is not seriously impaired by circulating toxin.

CHART VIII.



Case No. 279.—Boy, aged 14. Asterisk shows date of complete expulsion of worms. Shows arsenic essential to recovery, but its action much accelerated by oral administration of iron.

Summary.

1. Patients with slight anæmia may benefit from hæmatinics without the expulsion of worms. But no case of decided anæmia can be really improved unless the worms be expelled. 2. Recent cases of moderate anæmia from ankylostomiasis are cured by expulsion of the worms. Recovery in most chronic cases is very slow unless hæmatinics be given. 3. Under treatment with vermicides and iron the rise in hæmoglobin is a reliable index to the expulsion of the worms provided the marrow be in a condition to respond. 4. The administration of simple forms of iron by mouth is more satisfactory than the use of organic compounds or hypodermic medication. 5. Manganese cannot be substituted for iron. 6. After the expulsion of worms in a moderately severe case the recovery from anæmia is better and quicker when arsenic is given as well as iron. 7. In severe cases of ankylostomiasis the administration of arsenic is often essential to recovery. 8. In such cases arsenic given by the mouth may be ineffectual, but hypodermic medication generally succeeds. 9. Arsenic by itself is useless. Iron is always essential to recovery from severe ankylostomiasis. 10. Persistent eosinophilia after the complete expulsion of worms may be attributed to the presence of living larvæ in the tissues. 11. Intense and persistent anæmia in ankylostomiasis generally denotes exhaustion and atrophy of the bone marrow.

In conclusion, I must acknowledge my indebtedness to my friend, Professor Ferguson, for his advice and his note on the marrow condition here reproduced. My best thanks are due to my assistant physician, Dr. Garas, for his coöperation, and to a succession of house physicians who have undertaken the laborious work of examination and culture of the stools.

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Cairo.

A CASE OF CHEILOTOMY.

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LAST year, in conjunction with Dr. C. Preston Ball, of Dublin, I operated upon two cases of crippling traumatic arthritis of the hip-joint by an operation which consisted in opening the capsule of the hip-joint and chiselling away an abnormal lip on the head of the femur in the upper half of its circumference, thus restoring the movements of abduction and rotation to the joint, in which previously all the movements except limited flexion had been lost.[1] The results in these two cases were completely satisfactory. The case I am now about to record is a more recent one, in which a similar beneficial result from the operation has been tested by the lapse of ten months since the date of operation. The improvement secured is not only fully maintained, but continues to be progressive. The condition of the earlier cases remains satisfactory; the subject of my first operation wrote recently and said that he was frequently playing 18 holes a day at golf.

The patient, a man aged 52, was sent to me in July, 1913, by Dr. S. G. Davidson, of Hawick. He had also seen Dr. W. M. Crawford Watson, of Harrogate, who concurred in advising him to consult me. In 1898 the patient's horse fell with him. He was not dismounted, but his left hip was crushed as the horse rolled over on to its left side. He also sustained a broken collar bone and was treated in bed until the clavicle united. At the time he was not aware that he had damaged his left hip, but gradually pain developed in the joint and became more severe. For some time he was treated for sciatica as the pain appeared to have the characters of this affection. During the next seven or eight years the condition of his hip

[1] Cheilotomy: a Function-restoring Operation in Crippling Traumatic Arthritis of the Hip-joint, by W. Sampson Handley, F.R.C.S. Eng., and C. Preston Ball, M.D. Dub., Brit. Med. Jour., May 3rd, 1913.

became an increasingly serious incubus. He had undergone a yearly cure at Harrogate and always with a certain amount of benefit, and various methods of treatment had been used at different times under Dr. Crawford Watson's direction, including cataphoresis and vaccine treatment. He was unable to ride; indeed, he had not been on a horse for three years. This was a very serious disability, since it prevented him from controlling the management of his large farm. He could walk half a mile with pain and difficulty. The pain lasted for some time after the exercise was over, and was so severe that it made him perspire freely. He could with difficulty put on his left boot. At night he was unable to lie on his left side owing to the pain which pressure produced in the hip. If in the night he rolled over during his sleep this pain awoke him. Apart from pressure, there was no spontaneous pain in the joint at night. His general health was good. He had not suffered from rheumatism in the other joints, except slightly in the big toes, and he had had occasional attacks of lumbago.

Stereo-skiagrams of the joint were taken by Dr. W. Hope Fowler, of Edinburgh. They showed marked lipping of the articular surface of the femur, together with a certain amount of lipping of the acetabulum. The normal concavity of the upper edge of the neck of the femur was replaced by a convexity. There was some blurring of the cartilage interval, but it was still present, so that disorganisation of the joint had not proceeded far. Dr. Davidson considered, and I agreed with him, that the skiagrams indicated a state of affairs which would be greatly improved by cheilotomy. This impression was confirmed by an examination of the patient. Flexion of the hip was possible to a right angle, while abduction and rotation were exceedingly limited, though not absolutely absent. There was slight wasting of the thigh to the extent of about one inch in circumference. An examination of the patient showed him to be in sound general health. He was, however, rather stout, and this added to the difficulty of the operation.

The patient came to London in August, 1913, for the operation, and on the 27th I operated. The anæsthetic was given by Mr. Herbert Charles, and the operation was a prolonged one owing to the stoutness of the patient and the depth of the wound. The hip was approached by a Kocher's posterior incision, and the capsule being opened the buttresses at the upper posterior and anterior aspects of the head of the femur were removed piece by piece. The capsule was sewn up with stout silk. The patient made a good convalescence, although the wound continued to ooze serum for about a week. Passive movements were begun after the first few days.

On Sept. 20th the patient left the nursing home, walking with the aid of a stick. His limping was much less than before the operation, and he could comfortably stride a capsized chair as wide as a horse's back, and could lie all night on the affected hip without being waked by pain—a fact which struck him particularly. There was free rotation of the joint. Abduction was fair but limited by some remaining muscular spasm. A week after his return home Dr. Davidson wrote to me that the patient had stood the journey well and that he was steadily improving. His letter goes on: "He has quite a big range of movement now and can abduct almost to the normal extent. He walks quite well and any limp that appears is more due to habit than anything else. His pain has disappeared entirely, and his spirits have risen in consequence. To-day for the first time in three years he got on horseback and rode round his farmyard without difficulty. His nurse and I are giving him daily movement and will continue to do so for some time yet. On the whole, you are to be congratulated on making a big success of this case."

In November the patient went to Harrogate for some massage and exercise and to take the water to keep down his weight, which since the operation had been increasing rather inconveniently. Dr. Crawford Watson wrote to me at this time: "I must congratulate you upon the result of the operation. He has much more movement and I should think he would be able to ride. He has been on a horse cantering and walking, but has not tried trotting yet."

On several occasions since his operation the patient has written to me. On Dec. 27th last year he says: "I can now walk fully a mile with the help of a stick, but when I try without I can proceed very slowly and only for a short distance, but I think I am gradually going in the right direction, if slowly. My health is good and I have put on 2 st. 2 lb. since I left the nursing home, which is worse for the leg to carry." I wrote to inquire about his riding, and he replied that by using a riding block which reached up to within a foot of the stirrup iron he could get on and off the horse without assistance and without difficulty, that he had no trouble in riding at a walking pace, and that he intended to try the trot in a short time. He still felt matters improving.

The patient reported himself to me on March 10th of this year in excellent general health. With increasing activity his weight has come down to its normal level. He is now living an ordinary life, and can stand about all day without being conscious of any pain or weakness in his hip. By my advice he has not attempted to walk long distances, but he can walk a mile at a fair pace without any discomfort either at the time or subsequently. A slight limp is still perceptible in his gait, which, however, is now active and strong. Since the operation he has had no pain whatever in the hip, a point on which he joyfully insisted. He is now able not only to mount and dismount a horse, but to trot and canter. In trotting, however, he finds some difficulty in rising in the stirrups, and has to help himself up with a hand on the front of the saddle. Cantering he finds quite easy.

On examination I found slight muscular wasting still persistent, the right thigh measuring an inch less round than the left one, and the right calf half an inch less. Abduction was perfectly free to the full extent; it appeared, in fact, actually rather more free on the side operated upon than on the other side. Rotation also was free. No muscular spasm existed. Flexion was free up to a right angle, as before the operation. This is now the only movement of the joint in which he is conscious of any abnormal restriction. His only present complaint is of slight pain in the adductors after any unusual exertion. This probably depends on slight shortening of these muscles during the period when abduction was in abeyance. He expressed himself as fully satisfied with the result of the operation, which has restored to him a life of full activity.

New Cavendish-street, W.

A COMMON MODE OF DEFERRED DEATH AFTER TRACHEOTOMY FOR LARYNGEAL DIPHTHERIA: THE RELATED TREATMENT.

BY JOHN BIERNACKI, M.D. GLASG.,
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AFTER temporarily successful tracheotomy there may be a return of obstruction due to loose membrane in the trachea—an issue not necessarily dangerous and in any case outside the scope of this paper. Again, a further growth of membrane in the main air passages below the tracheal incision may be responsible for secondary obstruction of a serious kind, but antitoxin treatment has materially altered the course of laryngeal diphtheria in this respect. Under present conditions it nearly always happens in cases of deferred death that severe lobular pneumonia develops. Death is usually attributed to the pneumonia, but this view requires qualification.

In most cases of the kind, if allowed to run their ordinary course, it is more directly the outcome of suffocation by a plug of desiccated mucus and inflammatory discharge located in the neighbourhood of the tracheal bifurcation, as is proved by the immediate relief of obstruction and marked general improvement which frequently ensue when the plug is removed with forceps after such cases have become serious or are even moribund. A plug that forms early may be partly composed of loose membrane, but often none is present. In order to reach the plug a sand-bag or rolled-up towel, sufficient in size, is placed under the patient's shoulders to throw back the head and extend the neck. Inserted closed, the points of the forceps are opened as the bifurcation of the trachea is approached; they are then advanced a little farther, closed again, and withdrawn. As a makeshift, sinus forceps will serve, the points being bent on the flat to a wide angle two-thirds of an inch from the end. However, this instrument is hardly safe, as the sharp points may excoriate the tracheal mucous membrane, and it is sometimes difficult to obtain an effective hold on the plug with them. At Plaistow Hospital the forceps used are broad and bulbous at the point. With either instrument it is easy to search the whole trachea downwards, and even the entrances of the bronchi, given that the head and neck are in proper position. Only a small portion of the plug may be brought away at a first attempt; it may have to be removed piecemeal until what remains is coughed up towards the tracheal incision and can be extracted. Unfortunately the obstruction nearly always recurs; at first the interval may be as long as 12 hours, but it tends to become shorter until extraction gives less relief and then none. Failure to relieve may depend on plugging of the two main bronchi, other factors being the extension of the pulmonary affection with widespread occlusion of the bronchioles.

Many illustrative cases could be cited, but the two following will suffice.

CASE 1.—The patient, a male aged 2 years, was admitted to Plaistow Hospital on March 16th with laryngeal diphtheria and urgent obstruction. Tracheotomy relieved the latter completely, and a comfortable night resulted. Then the discharge from the tube became scanty and the child increasingly restless, with some recession. Towards evening his condition was considered sufficiently grave to justify the use of forceps, and a mass of mucus mixed with membrane was extracted. The obstruction and distress largely subsided. An alkaline spray was prescribed. About midnight the patient expelled a large piece of membrane through the tube. In the morning his condition was evidently worse. He was restless and had some cyanosis and a poor pulse. Ground continued to be lost, and at 2 P.M. a plug of desiccated and inflammatory discharge about two-thirds of an inch in length was withdrawn bodily from the trachea with forceps. Breathing immediately became freer, but the general condition showed less improvement. Throughout the following night and day the restlessness varied in degree. At noon, and again at 6 P.M., plugs were extracted from the trachea. A better night was thereafter passed, although little discharge came away except when the child coughed after spraying. The tracheotomy tube was taken out at 11.30 A.M., and was not replaced despite some restlessness and slight recession. The discharge was becoming looser and more of it was coughed up. Having disappeared for a time the recession returned in the ensuing night, and next day a rubber tube with a dorsal opening was inserted. Four days later the tube was dispensed with. It had to be used again after two days and through the following three nights, from which time the patient made a rapid recovery.

CASE 2.—The patient, a boy aged 3 years, was admitted to Plaistow Hospital on June 17th with marked dyspnœa and recession due to diphtherial croup. The case was of the rather rare septic type. Tracheotomy did not completely relieve the obstruction. Very little discharge was expelled, and a restless night followed. At 11 P.M. a plug of the usual kind was extracted and some relief obtained. Spraying was begun. Next day the child was more comfortable and coughed up a fair amount of thick discharge. By midnight, however, distress had become marked again. On the extraction of a plug there was a change for the better, maintained on the whole through the following day, except that the discharge was offensive—an ominous sign. In the evening cyanosis, modified by pallor, became definite. At 11 P.M. recession was increasing and some thick muco-purulent discharge was extracted. Forceps had to be used again for severe obstruction after a very restless night and day. The relief was less. Oxygen inhalation was begun, but the patient did not react satisfactorily. It was plain that the heart was failing. At 1 A.M. extraction was attempted without success, as only a little discharge was brought away. The child died next day at noon.

Recovery is exceptional once obstruction develops to a degree which makes extraction vital. Nevertheless, life is occasionally saved by clearing out the trachea. Further, the fact that asphyxia largely due to the plug is likely to anticipate death from the pneumonia *per se* must give weight to measures directed against its formation. These considerations indicate a line of treatment which has been well tested at Plaistow Hospital.

1. While dry cases—those generally in which lobular pneumonia is established at the time of operation—are far more liable to tracheal plugging, the latter may take place although the patient's condition is at the outset quite satisfactory. For this reason I feel that the present system of treating straightforward cases without steam cannot be upheld. In my opinion it is safer to place every tracheotomy case in steam for at least a week if the tube is required for that time. Short of this, steam will, of course, be employed at the first sign of dryness. It hinders desiccation of the discharge and is beneficial when lobular pneumonia threatens or is established.

2. If obstruction returns after an interval and is not due to loose membrane, and at the same time the patient is not coughing up discharge freely or the discharge is very tenacious, a spray of sodium bicarbonate is prescribed (10 gr. to the ounce of water). The efficacy of this treatment depends partly on the expertness of the nurse. Using a rather coarse, intermittent spray, she

compresses the ball, say, three times with the nozzle directed into the mouth of the tracheotomy tube. This she does during successive inspirations. The patient will probably then begin to cough, and the spraying fluid mixed with more or less discharge may be driven up to the inner end of the tube or out of it. To sop up the fluid and discharge, the nurse makes a thin swab by wrapping cotton wool round the point of sinus forceps bent to the angle of the tube. New swabs are inserted until one comes away dry. Then she repeats the whole process, perhaps three or four times. Not uncommonly the patient in the end coughs up a quantity of partly desiccated discharge, so that the formation of a plug may be delayed or possibly averted. If definite plugging occurs the sodium bicarbonate is increased to 20 gr. to the ounce.

3. Extraction should be postponed until it is certain that spraying alone will not dissipate the plug and the obstruction has become immediately dangerous. Great care is needful in inserting the forceps; if they are opened too soon or too wide or force is used the wall of the trachea may be injured. Streaking of the discharge by blood not referable to the operation wound may reveal such injury, the result of which may be that obstruction returns earlier and proves less amenable to treatment. The forceps should be inserted no farther than is necessary to grip the plug. Extraction is discontinued in improving cases whenever this can be done without undue danger of suffocation. Some risk may have to be run. Throughout the spray may be serviceable.

4. Oxygen when used is always passed through water. Straight from the cylinder it rapidly absorbs moisture and thus dries up discharge.

Wimpole-street, W.

ARTIFICIAL PNEUMOTHORAX:

FUNDAMENTAL DEFECTS IN THE ACCEPTED TECHNIQUE OF INDUCING PNEUMOTHORAX, AND HOW TO REMEDY THEM.

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TREATMENT by means of artificial pneumothorax is still comparatively rarely applied even in suitable cases of unilateral phthisis. An obvious reason for this is to be found in the difficulties and dangers incident to the accepted method of operating. The difficulties will be appreciated when we remember that the operator is required to carry down his needle to a point at which it will separate the parietal and visceral pleuræ which are in apposition at an unknown depth, and also to verify that it has reached its proper position between these before gas is allowed to flow in. The dangers which have to be taken into account are the possibility of injuring the lung, and the risk of allowing gas to pass into places other than the pleural cavity. It has not been thought necessary to take any great precautions to prevent the puncturing of the lung, but on the other hand measures are regularly taken to verify the proper position of the needle, it being laid down that the gas shall not be allowed to flow until it has been inferred, from the estimation of the intrapleural pressure and its variations, that the needle is in the pleural cavity. Thus it is recognised that it is, at any rate for the purpose of ensuring that the gas shall not pass anywhere except into the pleural cavity, absolutely necessary to record the intrapleural pressure and its variations. And in point of fact the problem of inducing pneumothorax with safety practically resolves itself into the problem of devising the most suitable way of arriving at the pressure at the point where the eye of the needle rests.

I propose in this paper to discuss two ways in which this can be done. The first is the one in general use. In it the intrapleural pressure is given directly by the reading of a manometer connected through a T-piece with the tube which carries gas from the reservoir to the needle. This may be called the direct method. The second is brought forward here for the first time, and is designed to remedy the defects of the direct method. In it a resistance in the form of an adjustable throttle is introduced into the tube which connects the reservoir and the needle, and the intrapleural pressure is then obtained indirectly from the readings of two manometers inserted into the connecting tube on either side of the throttle. This may be called the indirect method.

I will deal first with the direct method, and show that it is seriously defective in that it will not furnish records of the intrapleural pressures until the lung has been punctured and gas leaks into the pleural cavity.

We may begin with a discussion of the mechanics of the manometer as applied to the recording of the intrapleural pressure. It will be recollected that in the ordinary procedure, as a preliminary, the reservoir is shut off from the manometer by means of a clamp before the needle is inserted into the chest wall. The manometer will then record atmospheric pressure, and will continue to do so as the needle is passing through the tissues, but as soon as the orifice enters the pleural cavity the gas will, on account of the negative intrapleural pressure, be aspirated into the pleural cavity from the connecting tube, and in consequence water will be sucked from the open into the closed limb of the manometer. The resulting difference in the levels of the fluid in the manometer will then indicate the negative pressure. It is now presumed that, if at this point the needle is in proper position in the cavity, movements corresponding to the respiratory movements will be communicated to the manometer by the gas passing in and out through the needle. If these movements do not appear in the manometer the needle is usually pushed forward and drawn back until they do. But consideration will show that movements of respiration cannot be communicated to the manometer unless there is gas in the pleural cavity which can be driven back through the needle, and so the question presents itself whether the amount of gas which has been aspirated from the connecting tube and manometer into the pleural cavity will suffice, and whether it will be available for this purpose.

In connexion with the former issue we will recognise that, inasmuch as the intrapleural pressure never differs much from the atmospheric pressure, and since in consequence any gas drawn into the cavity will not be appreciably rarefied, the volume of gas which will have passed from the connecting tube into the pleural cavity will be practically equal to that of the fluid which will have passed from the open to the closed limb of the manometer. This volume would, when the negative

pressure stands at 15 cm. of fluid in a manometer tube of 0·3 cm. bore, measure less than 1 c.c.

Again, when we ask ourselves whether the gas which has been drawn in will always find a free passage back through the needle, we see that if the quantity of gas in the pleural cavity is insufficient to keep the lung off the needle—and for this purpose 1 c.c. will be quite insufficient—the visceral pleura will, as soon as the intrapleural pressure rises during expiration above that in the manometer, be flapped back upon the eye of the needle, and gas will then be prevented from returning to the manometer. Any subsequent rise in the intrapleural pressure will not be recorded, and the level of the fluid in the manometer will therefore remain the same until, with the return of inspiration, the intrapleural pressure again falls below that recorded by the manometer and the valve opens again.

Now I have shown in a previous paper[1] that gas in the pleural cavity tends to take up a position opposite the consolidated portions of the lung, and so in general the gas aspirated from the manometer will move away from the needle and the valve close earlier with each successive expiration, until after a few respirations it will remain closed during the whole of the expiratory period. The pressure[2] then recorded will correspond to the lowest which is reached during inspiration; in effect the manometer will become a minimum pressure manometer.

This, then, is the train of events which will necessarily follow an attempt to induce pneumothorax for the first time, unless the operator by his manipulations brings about other conditions which prevent valve action and allow respiratory movements to be communicated to the manometer. In other words, the valve action of the lung will prevent the recording of the intrapleural pressures, unless the operator introduces into the pleural cavity more gas than that which is aspirated from the apparatus. There is only one source from which the necessary additional gas can come. It must obviously be drawn in from the alveoli through punctures made into the lung.

This is confirmed by the fact that I had distinct evidence of the establishment of "spontaneous" pneumothorax in a case where I had abandoned the attempt to induce "artificial" pneumothorax and had withdrawn my needle without allowing any gas to pass in from the reservoir. Again a radiograph of the chest taken after a first operation usually shows evidence of more gas in the pleural cavity than has been introduced from the reservoir. While it is a common experience of those using the direct method, that gas can be detected in the pleural cavity by radiography after 200 or 300 c.c. have been introduced, it is our experience since we have adopted the indirect method, a method which, as will be shown below, makes it possible to take records of the intrapleural pressures without first puncturing the lung, that it is rarely possible to detect gas in the pleural cavity until considerably more than 300 or 400 c.c. have been introduced. In point of fact after the change of method was adopted in this hospital, Dr. G. H. Orton, to whom I am indebted for all my X-ray records, found it difficult to believe that such large quantities as 300 or 400 c.c. had been introduced in these cases until he had seen the method in operation.

When we ask ourselves in this connexion under what conditions gas in the pleural cavity would be demonstrable by radiography, we see that its detection would be dependent on the fulfilment of the following conditions: (1) There would have to be established between the lung and the chest-wall a considerable gap through which rays would pass without meeting any obstacle; and (2) the margin of the lung would have to be dense enough to cast a well-defined shadow on the screen. Here attention may be called to the fact that when the lung is still almost normally dilated the shadow cast by its margin is more or less indefinite, but when, as with a large pneumothorax, it becomes retracted, or when it is consolidated, many more rays are interrupted by it, and thus the margin thrown on the screen becomes better defined. Now inasmuch as the gas in a pneumothorax will, unless it becomes localised, tend to spread out as a thin layer, it is unlikely that the introduction of 400 c.c. will cause the development of a sufficiently wide gap, and also unlikely that it will at the same time cause enough retraction of the lung to show up the margin clearly in profile. And, further, it must be remembered in this connexion that where the rays have to pass through one and the same amount of lung substance and one and the same amount of gas it makes no difference to the picture whether that gas is outside or enclosed in the lung.

Thus it would seem that radiographic evidence of gas in the chest could hardly be obtained after the introduction of so small a quantity of gas as 200 or 300 c.c., and we have justification for the conclusion that radiographic demonstration of a pneumothorax after the introduction of such a quantity of gas is achieved only by this being largely supplemented by leakage from the lung.

I will now pass on to the consideration of the indirect method. This method enables us to obtain a record of the respiratory movements and of the intrapleural pressures by the aid of gas supplied from the reservoir instead of from the punctured lung; also to obtain an uninterrupted record because the continuous flow of gas from the reservoir prevents any valve action.

The essential features of the apparatus by means of which this can be achieved will be understood from the following description. The gas in its passage from the reservoir to the pleural cavity encounters two resistances, the adjustable throttle and the needle. Before gas passes through the throttle its pressure (see Fig. 1, P_1) is recorded by the manometer next to the reservoir, and this will be the reservoir pressure; then again, after the gas has passed through the throttle, and before it reaches the needle, its pressure, which has now fallen, is again recorded, this time by the manometer next to the needle. It will be appreciated that so long as this "intermediate" pressure is maintained above the intrapleural pressure, gas flows into the pleural cavity, and the valve action cannot

[1] THE LANCET, July 5th, 1913, p. 18. On the Possibility of Achieving by Partial Pneumothorax the Advantages of Complete Pneumothorax.

[2] This pressure is usually much lower than the lower limit recorded when the oscillations are not interfered with by the valve action. The reason for this will be understood when we remember that the negative pressure is due, not only to the elastic tension of the lung, but also to such passive resistances as are called into play only when the inspiratory muscles are acting. The existence of these passive resistances will be best appreciated when we recall to mind conditions in which they are considerably increased. For example, very considerable resistance to inspiration is developed when the lung becomes less expansile, as in the case of congestion or consolidation, or, again, when in connexion with an extensive pneumothorax the expansile lung resists expansion on account of the alveolar walls becoming sealed up. Now such passive resistances called into play at the outset of the movement fall off toward the end when the muscular effort ceases, and then the negative pressure becomes wholly due to the elastic tension. It is therefore explicable that the intrapleural pressure should be lowest when this passive resistance is great; that is, before the end of inspiration and before the manometer which necessarily lags has time to record it. On the other hand, when the valve action makes it impossible for the manometer pressure to rise, the absolute minimum pressure only will ultimately be recorded.

be called into play. Also that when the respiratory movements are taking place, corresponding oscillations will be produced in the manometer next to the needle, but not in the other, because this will continue to register the reservoir pressure. Moreover, from the relation between the reservoir pressure and the mean intermediate pressure given by the "reservoir" and "intermediate" manometers respectively, we can, as I shall show, readily estimate the mean intrapleural pressure, provided always we have at the outset adjusted the throttle

FIG. 1.

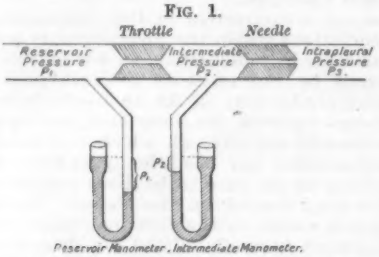


Diagram showing the scheme of the apparatus.

so that its resistance bears a known ratio to that of the needle. (Hereafter the mean of the intermediate pressure, which is a fluctuating pressure, will be spoken of as the "intermediate pressure" (P_2). Likewise the mean of the intrapleural pressure as the "intrapleural pressure" (P_3), and the mean readings of the manometers as "the readings.")

The relation which subsists between P_1, P_2, and P_3, will depend on the fact that the ratio of the pressure which is driving gas through the throttle to that which is driving gas through the needle is equal to the ratio of the resistance of the throttle to that of the needle (the resistance ratio, r). Now the pressure which is driving gas through the throttle is the difference between the pressures above and below—that is, the difference between the reservoir and the intermediate pressures (P_1–P_2). Likewise, the pressure which is driving gas through the needle is the difference between the intermediate and the intrapleural pressures (P_2–P_3). Hence the ratio of the differences $\frac{(P_1-P_2)}{(P_2-P_3)}$ is equal to the resistance ratio (r)—i.e.:—

$$r = \frac{P_1-P_2}{P_2-P_3} \quad \text{..... (i.)}$$

and

$$P_2-P_3 = \frac{P_1-P_2}{r} \quad \text{..... (ii.)}$$

—i.e., the difference between the intermediate and intrapleural pressures ($P_2 - P_3$) is obtained by dividing the difference between the reservoir and the intermediate pressures ($P_1 - P_2$) by the resistance ratio. From this it will be seen that the intrapleural pressure is given by the formula—

$$P_3 = P_2 - \frac{P_1-P_2}{r} \quad \text{..... (iii.)}$$

—i.e., the intrapleural pressure is obtained by subtracting from the intermediate the difference between the reservoir and the intermediate pressures divided by the resistance ratio. Again, it will be seen that if the needle opens into the atmosphere the pressure P_3 is zero, and from formula i. we have—

$$r = \frac{P_1-P_2}{P_2}$$

or

$$r = \frac{P_1}{P'_2} - 1 \quad \text{..... (iv.)}$$

—i.e., the resistance ratio can be calculated when the needle is in the air by dividing the reservoir reading by the intermediate and subtracting unity. If the needle is in the pleural cavity and we do not know the resistance ratio, we may obtain it from readings given for two positions of the water bottle (*vide infra*). Thus, if P'_1 and P'_2 are second readings of the manometers—

$$P_3 = P_2 - \frac{P_1-P_2}{r} = P'_2 - \frac{P'_1-P'_2}{r}$$

and

$$P_2 - P'_2 = \frac{1}{r}\{(P_1-P_2)-(P'_1-P'_2)\}$$

$$= \frac{1}{r}\{(P_1-P'_1)-(P_2-P'_2)\}$$

$$r = \left\{\frac{P_1-P'_1}{P_2-P'_2}\right\} - 1 \quad \text{..... (v.)}$$

—i.e., the resistance ratio is obtained by dividing the difference between two reservoir pressures by the difference between corresponding intermediate pressures and subtracting unity.

Having described the essential features of the indirect method, I will point out that, as compared with the direct method, it has also the following very great advantages. (*a*) A mere glance at the manometers tells us at once whether gas is flowing into the chest. Gas is flowing in as long as the intermediate manometer indicates a lower pressure than the reservoir manometer, and it has ceased to flow in when they indicate the same pressure. On the other hand, it will be remembered that in the case of the direct method, before we can be sure that gas is actually passing into the chest we have to note the level of the water in the reservoir, and then to wait, often for a long time, to see whether there is a change in that level. (*b*) It is no longer necessary, as is the case with the direct method, to clamp off the reservoir and suspend operations every time we wish either to verify the position of the needle by obtaining manometric oscillations or to take a reading of the intrapleural pressure. (*c*) We avoid the risk of fluid being sucked back into the needle when the manometer pressure sinks below the intrapleural. Such an accident might easily cause permanent and complete blockage of the needle.

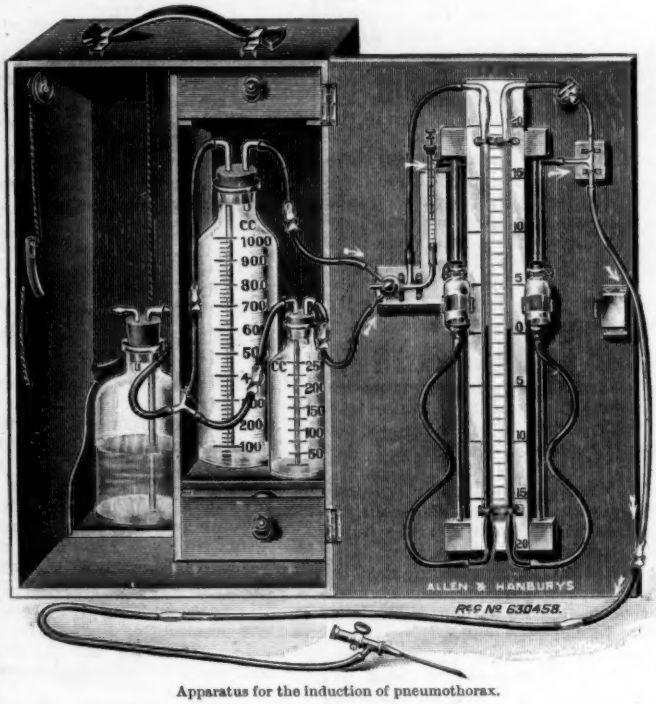
The Apparatus.

I will now describe the apparatus which has been devised by me for the application of the indirect method, and made for me by Messrs. Allen and Hanburys. It will be seen from Fig. 2 that the component parts are contained in a box, and include the following: (1) the water bottle; (2) two graduated glass cylinders which act as reservoirs—the large for nitrogen and the small for oxygen; (3) a three-way tap; (4) the throttle; (5) two manometers; (6) various connecting tubes; and (7) the needle.

We have in the left compartment of the box, standing in a cage whose height can be adjusted by a string passing over a pulley, the water bottle from which water can be siphoned across into either the oxygen or the nitrogen reservoir which stand in the right-hand compartment. According as the three-way tap is adjusted oxygen or nitrogen is driven through the system of tubes and out through the needle. As gas passes onwards from the tap it communicates first by means of a lateral branch of the tube with the left-hand or reservoir manometer; it then passes through the throttle, which is presently to be described. It now passes behind the manometers, and finally, after communicating by a branch with the right-hand or intermediate manometer, courses through a flexible tube provided with a clamp, the "outlet" clamp, and out by the needle.

The manometers are constructed on a U-tube pattern, the fluid used being methylated spirit coloured by an anilin dye. The limb which communicates with the gas stream consists of an upright glass tube of 0·25 cm. bore, provided at its ends with safety bulbs and fixed against a centimetre scale, while the other limb consists of a flexible tube ending in a reservoir which opens to the air and can be moved up and down on a supporting rod. The calibre of the reservoir is made so large compared with that of the upright tube that when fluid passes from one into the other the change of level in the wider is negligible compared with that in the narrower. When for atmospheric pressure the level of the fluid is adjusted to zero on the scale, the working range of pressure is from 20 cm. to −20 cm., but we may record a pressure of 35 cm. by raising, −35 cm. by lowering, the manometer reservoirs. With a view to damping excessive oscillations in the intermediate manometer when an average reading is required, the rubber tube which connects the manometer with the gas stream is provided with a screw clamp. This works upon a pledget of cotton wool, which is placed inside the tube and prevents the communication between the manometer and the gas stream being completely cut off.

FIG. 2.

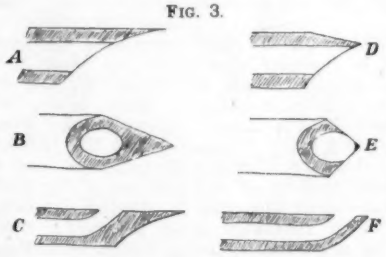


Apparatus for the induction of pneumothorax.

We may now return to the adjustable throttle which is introduced into the path of the gas between the two manometers. This consists of: (1) An outer vertical glass tube about 10 cm. long, with a lateral branch near its upper end; (2) an inner tapering tube of not more than 0·2 cm. bore, fused by the rim of its wider upper end to the inner surface of the outer tube just below the lateral branch; and (3) a plunger in the form of a piston rod of uniform gauge which passes down through an air-tight cover in the upper end of the outer tube into the inner tube. The obstruction which the throttle offers to the flow of gas is determined by the distance to which the plunger is driven down into the inner tube, this being recorded by the aid of a divided scale inscribed on the wall of the outer tube.

The account of the apparatus may be concluded by describing the needle. This differs from the ones in general use in the following respect. While in the ordinary needle (Fig. 3, A and B) the actual point is, by the fact that the dorsal wall is cut across obliquely from within outwards, carried well beyond the orifice, in the one I use (Fig. 3, D and E) the point does not project appreciably above the upper edge of the orifice. This is arranged by grinding the dorsal aspect so as to give, instead of a single ventral facet of the ordinary needle, a trocar whose facets would be the truncated ventral facet and two smaller latero-dorsal facets. If it is thought better to employ a lateral-eyed needle, I would suggest the form shown in Fig. 3, F, instead of the usual form shown in Fig. 3, C.

FIG. 3.



Directions.

First adjust the manometers. To do this turn off the three-way tap so as to shut off communication with the gas reservoirs. Then draw up the plunger of the throttle and open the outlet clamp. Now adjust the manometer reservoirs so that the levels of the fluid in the straight limbs stand at zero on the scale. (Readings above this will represent negative and readings below positive pressures.)

Next we have to fill the reservoirs with gas. To do this first disconnect the reservoirs from the three-way tap, and having filled the water bottle with water, allow this to syphon across so as to fill up the reservoirs. Take the tube which previously connected the large reservoir with the three-way tap and fit it to a nitrogen cylinder. Let gas pass in until all the water is driven back into the bottle. Then re-establish the connexion between the nitrogen reservoir and the three-way tap. Go through the same procedure with the small

reservoir, using here oxygen instead of nitrogen. Now replace the air in the rest of the apparatus by oxygen. To do this open the three-way tap to oxygen, raise the water bottle and allow some of the gas to flow through the needle. Then apply the outlet clamp and let gas now bubble through the manometers. Finally, lower the water bottle so that fluid runs back again into the straight limbs.

The throttle has now to be adjusted. For this purpose raise the water bottle until the reservoir manometer reading is about 12 cm. Then adjust the plunger so that the reading of the reservoir manometer is three times that of the intermediate. By reference to formula iv. it will be seen that the ratio of the resistance of the throttle to that of the needle is now 2.

We are now ready to insert the needle into the chest. This is done as follows. First adjust the water bottle so that the reservoir pressure stands between 0 and 1. Oxygen now flows very slowly through the needle. Then perform paracentesis in the same way as is done when the direct method is used. From the moment the needle enters the tissues, the manometers must be unremittingly watched for the indications which the movements in them afford. By means of these we must be able to recognise whether gas is flowing, and if it is to estimate its approximate rate; also, we must be able in the case where there is no flow to find out what prevents it, and in the case where gas is flowing to determine the position of the eye of the needle.

Concerning the flow, it has already been pointed out that there is none when the two manometers indicate the same pressure—that is, when the fluid in both stands at the same level. Again, there is a flow when the level of fluid in the intermediate is higher than that in the reservoir manometer, and the rate of flow is proportional to the difference between these levels. In the case where there is no escape of gas the obstruction may be due to either of two causes: (1) the needle may be embedded in tissue; and (2) the eye of the needle may be blocked. To distinguish between these, shut off the reservoir and forcibly compress the connecting tube so as to drive gas toward the needle. If the needle is patent gas will now be driven into the tissues and consequently a negative pressure, which will be indicated by the manometers, developed in the tube when it is released. If, on the other hand, the eye of the needle is blocked, our manipulations will leave the fluid in the manometers unaffected.

In the case where gas is flowing into the chest we can determine the bearings of the needle only by keeping watch on the mean pressure of gas at the orifice. If the eye of the needle is safely lodged in the pleural cavity, and there is already sufficient gas present to prevent any valve action, we may obtain this pressure by the direct method by closing down the throttle and reading off the intermediate manometer. The mean of the readings will then indicate the mean intrapleural pressure. If, however, there is a possibility of the valve action taking place we must apply the indirect method. The procedure will then depend on whether the needle is quite patent or has become partially obstructed. Such an obstruction will be recognised by raising the water bottle, and noting whether the rise which this produces in the reservoir pressure is as much as three times that produced in the intermediate. If it is as much the needle is quite clear, but if it is less the needle has become obstructed (cf. formula v.).

In the case where the needle is quite clear the pressure at the eye is obtained as follows. Take the reading of the reservoir manometer, then the reading of the intermediate, and from the second reading subtract half the difference between the first and the second (*vide* formula iii.). Thus, if 8 and -2 were the readings, the difference would be 10 and the intrapleural pressure

$$-2-\frac{10}{2}=-2-5=-7.$$

In the case where the needle has become partially blocked it becomes necessary to estimate the altered resistance ratio. This is done as follows. Take the readings of the manometers for two positions of the water bottle. Divide the difference between the reservoir readings by the difference between the intermediate readings and subtract unity (*vide* formula v.). Example:—

	Reservoir pressure.	Intermediate pressure.
First readings	12	 3
Second readings	2	..... −1
Differences	10	 4

Resistance ratio ... ... $\frac{10}{4}-1=\frac{6}{4}=\frac{3}{2}$.

In order now to get the pressure at the eye of the needle proceed as follows. Take the readings of the two manometers and divide their difference by the new resistance ratio obtained above. Now take this result and subtract it from the reading of the intermediate manometer. This gives us the pressure at the eye of the needle (*vide* formula iii.). For example, we may take the readings given above for estimating the resistance ratio. Thus, taking the readings 12 and 3, the difference is 9, and this divided by the resistance ratio is 6. Subtracting this 6 from the reading of the intermediate manometer 3, we have -3 for the required pressure. When we use the other readings 2 and -1 and proceed as before we obtain the equation $-1-\frac{2-(-1)}{3/2}=-3$. This will be seen to be the same result as that obtained from the first readings.

It will be noted that if the needle becomes partially obstructed, and we do not in estimating the pressure take into account the change in the resistance ratio, the rule would give us too high a value for the pressure. Thus in the examples above, where the first readings were 12 and 3 and the others 2 and -1, the estimated pressure, assuming the resistance was still 2, would be in the first case $3-9/2=-1\frac{1}{2}$ instead of -3. In the second case $-1-3/2=-2\frac{1}{2}$ instead of -3.

These examples show that the lower the reservoir pressure the smaller the error, and hence if we ensure this pressure being less than atmospheric pressure, we may when estimating the pressure at the eye of the needle neglect any slight block.

Having obtained records of the mean pressure at the eye of the needle, we may now deduce the position according to the following rules: 1. When the mean pressure remains constant and does not exceed -5 cm., the needle is in the pleural cavity. 2. When the mean pressure stands at the outset at -5 cm., and afterwards rises rapidly, the needle is in a pocket bound down by adhesions. 3. When the mean pressure is approximately equal to atmospheric pressure, the needle is in the lung. 4. When the values of the pressure do not conform to any of the

above types, the needle is probably misplaced. In these circumstances the gas must be immediately cut off.

When we have inferred from the estimations of the pressure at the eye of the needle and the oscillations in the intermediate manometer that the needle is safely lodged in the pleural cavity, and that in consequence we need no longer fear accidents from the introduction of nitrogen gas, turn on this gas and allow it to flow. As the level of the water in the reservoir rises, raise the water bottle so as to maintain the reservoir pressure. All the time that the gas is flowing, the manometers must be carefully watched so that any irregularities shall be at once noticed. The question of how much gas shall be introduced is of course a matter for the discretion of the operator, but in cases in which it is desired only to maintain a partial pneumothorax I would suggest leaving off while the intrapleural pressure is still negative.

These instructions will have to be modified in the case where gas is introduced into the pleural cavity to replace a pleural effusion. In these circumstances it is necessary to connect the needle with an aspirating apparatus, and this is effected by means of a socket on the needle holder. The needle one would employ should be considerably larger than that used for the operation just described, and its resistance correspondingly less. On the other hand, the throttle resistance should be about the same. In such a case the resistance ratio would be so great that the intermediate pressure would be practically the same as the intrapleural. Before performing paracentesis connect up the apparatus with the aspirating pump and apply the outlet clamp. Then raise the reservoir pressure above any likely intrapleural pressure. This will prevent fluid passing into the connecting tube. Now introduce the needle into the pleural cavity and aspirate some fluid. This done, shut off the aspirator and release the outlet clamp. Gas will then commence to flow and the intrapleural pressure can be estimated. Now regulate the reservoir pressure so that it is not more than 5 cm. above the intermediate. By alternately aspirating fluid and allowing gas to flow, we may ultimately leave the pleural cavity containing a known quantity of gas at a suitable negative pressure without subjecting the lung to the rapid distension which would occur with aspiration only.

Before concluding this paper I will describe what has been common and striking experience in using this apparatus, experience which seems to me to put beyond question the points which have been already emphasised in connexion with the recording of the intrapleural pressures by the direct method.

I have frequently passed the needle into the chest, have satisfied myself by estimations of the intrapleural pressure and its variations that the eye of the needle was safely lodged in the pleural cavity, have passed quantities of gas varying from a few c.c. to over 100 c.c., and have then found, on cutting off the supply of gas from the reservoir and so applying the direct method, that the respiratory oscillations gradually became smaller and smaller and finally stopped, the pressure recorded by the manometer sinking to a minimum. In some of these cases, on the patient taking a deeper breath than usual, the recorded pressure has fallen still lower. Again, when the gas has been once more turned on, it has been the rule for the oscillations to recommence, but in some cases in which they have failed to appear I have afterwards found the needle blocked.

Although the conclusions to be drawn from these observations have been already embodied in the earlier part of this paper they are so important that I will restate them. They are as follows: 1. Gas introduced into the pleural cavity will often move away from the needle. 2. If it moves away and gas does not flow in from the reservoir, the valve action of the lung comes into play, cutting off the manometer from the pleural cavity. 3. If the direct method comes into application in such cases oscillations of the manometer are obtained by the aid of gas which continuously leaks out from punctures made into the lung.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON A CASE OF RATTLESNAKE BITE.

BY W. ESSEX WYNTER, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN TO, AND LECTURER ON MEDICINE AT, MIDDLESEX HOSPITAL, LONDON, W.

BITES of snakes, other than adders, are so rare in this country that the following instance is of interest.

On June 26th, at noon, a keeper, aged 20, at the Zoological Society's Gardens, while transferring a rattlesnake just arrived from Texas from its travelling box to a cage, incautiously inserted his fingers to displace the glass front. In an instant the snake struck at his hand, inflicting superficial wounds on the first and second fingers immediately below the nail, drawing blood. The curator at once tied ligatures round the two fingers and a handkerchief about the upper part of the forearm, and then made incisions across the dorsum of the fingers on the proximal side of the wounds. The patient was placed on a mattress and kept quiet all day. He felt faint and weak but thought he might have been able to walk if necessary. Solid potassium permanganate was applied to the bites and incised wounds within a few minutes. At about 7 P.M. a general stiffening of the limbs occurred, with swelling in the throat, causing difficulty in swallowing and some dyspnœa. During the night vision became dimmed. The bowels and bladder were relieved. Prostration was more marked, and attempts were made to rouse the patient. Pain occurred in the back and on movement of the limbs. There was very little sleep, but no headache or vomiting.

On the morning of the following day the patient felt better, but experienced double vision and the arm was painful, aching up to the shoulder. Both arms were flexed across the body, and attempts to extend them caused pain. There was some rigidity of the neck.

On admission to the Middlesex Hospital about midday the man seemed languid and lay on his back with the eyes half open. His face was white and perspiring, and there were some swelling and drooping of the eyelids. Pulse, 120; respiration, 28; temperature, 98° F. The right arm was swollen, red, and painful; there was some sloughing about the cuts on the fingers which were blackened by the permanganate, and a gland could be detected in the

axilla. The swelling extended about three inches above the elbow. Dimness of vision was still complained of, with diplopia on directing the eyes to any object. The left pupil was slightly smaller than the right, though both reacted to light and accommodation. Urine passed at 2 P.M. was very dark brown in colour, resembling porter, and exhibited a cloudy deposit on standing. There was a decided blood reaction with guaiacum and a considerable amount of albumin, but very few corpuscles were present in the deposit (hæmoglobinuria). Pupil and knee reflexes were present. Heat, cold, and touch sensations were normal. Half an ounce of brandy was given every four hours, and 10 oz. of saline enemata every six hours. The arm was immersed in creolin ʒi. to the pint for four hours and subsequently painted with ichthyol for an hour. Calomel gr. ii. and a saline purge were administered, and a pillow was placed in the small of the back to relieve aching.

On the 28th the urine retained the same characters, there was less œdema of the eyelids, and the swelling of the arm was subsiding. Vision was still affected so that the patient could not read. The urine 48 hours after admission was pale and clear with only a trace of albumin and no blood.

On the 29th the vision was normal. The swelling of the forearm, which never pitted, had almost completely subsided, and numbness had succeeded to tenderness. A slight petechial eruption was present. Two days later the patient was allowed to get up and he left on July 4th for the convalescent home completely recovered.

It is apparent that this patient did not receive a full dose of the venom, the wounds being more of the nature of scratches than punctures, and the prompt measures adopted further lessened absorption. Enough, however, entered the system to produce characteristic symptoms, expressed in the local swelling, hæmolysis, and temporary disturbance of the nervous system. The really critical period was passed before the patient came under observation at the hospital, as effective bites usually prove fatal in about 12 minutes. The weather was tropical at the time, but the pulse and respiration, 120 and 28 respectively, subsided to 88 and 24 in three days, though the temperature of the ward was rising continuously, reaching 80° F.

Wimpole street, W.

UMBILICAL FISTULA.

BY W. S. THACKER, M.D. T.C.D., F.R.C.S. EDIN.

As the presence of two ducts signifying the persistence of the urachus is remarkable, and as an umbilical calculus is also a surgical curiosity, I think it worth while recording the following case.

The patient, a student aged 24, was admitted to the Mission Hospital of the Union Medical College, Peking, on April 23rd, 1914. Two months before admission he noticed a slight watery discharge from the umbilicus and a month later the umbilicus became inflamed. On admission the skin about the umbilicus was red and swollen and a fœtid discharge was present. On April 24th I operated. I excised the inflamed areas of skin and then discovered a soft, evidently phosphatic, calculus. The removal of the inflammatory tissue and the discovery of the cause of the fistula necessitated the opening of the abdomen. I then discovered on the left side of the wound a fistula, through which I passed a probe into the bladder. This I closed and anchored to the left rectus sheath. On further examination I found a similar fistula on the right side. This I treated similarly. I closed the wound, inserting a rubber drain for 24 hours and leaving a catheter in the bladder for a similar time. The wound healed by first intention, and the patient left hospital on May 9th.

Peking.

NOTE ON AN UNUSUAL EFFECT OF NEO-SALVARSAN ON THE SKIN.

BY J. H. SHELDON, M.B. LOND., &C.,
DISTRICT MEDICAL OFFICER, BURMA RAILWAYS.

A MADRASSI adult male, who had contracted syphilis in November, 1912, came to the hospital of the Burma Railways, Insein, in October, 1913, suffering from intense general headache of from four to five months' duration, and right ptosis of two months' duration. His tongue was filthy, his bowels constipated, and his mental condition stupid. There was no vomiting or any skin lesion. He received neosalvarsan (0·9 grm.) intravenously on Oct. 12th, and a second similar dose on the 26th; no reaction occurred on either occasion. At this latter date his headache was nearly gone, and he was able to open his right eye almost completely. He received seven inunctions of mercury between Oct. 27th and Nov. 10th, on which day he left hospital.

The patient was not seen again until Nov. 30th, when he turned up at the out-patient department, perfectly well as far as his headache and paralysis were concerned, but as regards his skin in the following singular and distressing condition. The skin covering of the whole body, scalp, trunk, limbs, and even penis and scrotum, was swollen, thickened, and hard, and pitted only slightly on pressure. Fissures were present at practically every fold and flexure—ears, neck, axillæ, elbows, wrists, abdominal wall, groins, knees, and ankles. The entire surface was covered with fine scales, which were raised in clouds by the brushing of the hand over the chest or abdomen. The palms and soles were peeling. The itching was intense. The hair was very dry and brittle, but there was no alopecia. There were no lesions of the mouth or pharynx and no fever; the tongue was perfectly clean and the general condition excellent. The conjunctivæ were injected. He was detained in hospital, put on to mercury, and given sweet oil for inunction into the skin. At the time of his discharge, 24 days later, the skin had almost regained its normal condition, though that of the face and scalp, which he had been unwilling to anoint, was still dry, coarse, and scaly.

The thickening and hardening of the skin, the fissures, and the intense itching sufficiently distinguish the disease from pityriasis rubra, and it seems probable that the condition was an arsenical dermatitis and hyperkeratosis due to the two doses of neosalvarsan.

Insein, Burma.

CORNWALL COUNTY ASYLUM.—At the last meeting of the Cornwall county council the resignation was accepted with much regret of Mr. Henry Albert Layton, M.R.C.S. Eng., L.R.C.P., L.M. Edin., the medical superintendent of the Cornwall County Asylum at Bodmin. Mr. Layton was formerly senior assistant medical officer, and has been connected with the institution for the past 31 years.

Reviews and Notices of Books.

Practice and Problem in Abdominal Surgery.

By A. ERNEST MAYLARD, B.S. Lond., Surgeon to the Victoria Infirmary, Glasgow. With 39 illustrations. London: J. and A. Churchill. 1913. Pp. 388. Price 8*s.* 6*d.* net.

THIS is a very interesting work, dealing as it does with many important problems in connexion with abdominal surgery, and it deserves the careful study of all surgeons who operate on the abdomen. The author draws attention in his preface to the difference between the abdominal surgery of the year 1880, when he was senior house surgeon at Guy's Hospital, and that of the present day. He mentions that in 1880 at Guy's there were only 23 abdominal operations in the whole hospital, of which two were for intestinal obstruction, and both of these were fatal; there were three gastrostomies, all successful, and 18 ovariotomies, of which six were fatal. At the present day an abdominal operation excites very little attention, for these operations are now so frequently performed that there must be some special point of interest to attract to it any notice.

To form a correct appreciation of this work it is necessary to understand its nature. It is not, and it is not intended to be, a treatise on abdominal surgery; it contains no systematic description of abdominal operations, but it does contain the expression of the personal experience of a surgeon who for more than 30 years has devoted his chief attention to this branch of surgery. And therein lies its value, for the personal experience of a surgeon such as Mr. Maylard is worth many volumes of the compilations of the opinions of others. The mere names of the chapters will indicate the wide range of subjects discussed in this book. We have chapters on abdominal pain, on which Mr. Maylard has written more fully elsewhere, on problems in prognosis, on abdominal incisions, on peritoneal adhesions, on pyloric obstruction, and on general peritonitis. Mr. Maylard is the chief advocate of the transverse abdominal incision. The attentive reader will find much to repay perusal; he will glean here and there hints and suggestions of great value in his work, and though he may not feel inclined to agree with all the views expressed, he will surely recognise that they are the opinions of one who knows his subject well, and that they are therefore worthy of careful consideration.

Die Gonorrhoë des Wiebes für die Praxis dargestellt.

Von Professor Dr. F. FROMME. Berlin: S. Karger. 1914. Pp. 56. Price 2 marks.

IT is of comparatively recent years that our knowledge of the important part played by the gonococcus in the causation of diseases of women has been acquired. The recognition of gonorrhœa in man is a comparatively easy matter; not so in woman. There are so many causes of a purulent discharge from the genital tract in this sex that it is only the certain recognition of the gonococcus which enables us to make a correct diagnosis. Even now the exact frequency of the disease in women is far from certain. The gonococcus soon disappears, and cannot be found in many cases which from the clinical history are almost certainly cases of venereal infection. Noeggerath originally was of the opinion that gonorrhœa was as frequent in women as in men, and as he estimated its frequency in the former sex as high as 80 per cent. he condemned a very large number of women as victims of this disease.

In spite of the difficulties which surround any attempt to determine this question with certainty it is, however, beyond doubt that the percentage of incidence in women is not nearly so high as this. In gynæcological and obstetrical clinics the frequency of the disease is probably not more than some 25 per cent., and it must be remembered that this frequency does not hold good for the female population as a whole. The opportunities for acquiring venereal disease are more widespread in the case of young men than of young women, and it is probable that a case of gonorrhœa occurs in the female only once for every five or six cases in the male. It is fortunate that this is so, because the ultimate dangers of the disease in the two sexes cannot be compared. An attack of gonorrhœa in the male can usually with efficient treatment be quickly and certainly cured however disastrous the sequelæ where treatment has been neglected; in the female this is not so. Indeed, as has been remarked, "in women all attacks of gonorrhœa are curable except the first," and it is no exaggeration to say that in the majority of the cases the patient is never completely cured. Not only is the local infection often difficult to eradicate in the female, but the ultimate sequelæ in the shape of chronic cervicitis, bartholinitis, infection of the tubes and peritoneum, are often extremely difficult to treat, and in many cases cannot be cured with certainty. Indeed, if a woman is to acquire venereal disease at all it would be better for her, in the majority of instances, to acquire syphilis rather than gonorrhœa. The former is easy to recognise and easy to treat, the latter is difficult to recognise and difficult to treat.

Any attempt to place before the student and practitioner the main facts with regard to gonorrhœa and the best methods of attacking the disease is to be welcomed, and it is a pity that this excellent little work of Professor Fromme is written in German and not in English. In it he gives a very clear and practical account of the symptoms, course, diagnosis, and treatment of gonorrhœa in the female. It will certainly prove of great utility to those who are able to read German.

The Practice of Medicine.

By FREDERICK TAYLOR, M.D. Lond. Tenth edition. London: J. and A. Churchill. 1914. Pp. 1192, with 71 figures and 12 skiagraphic plates. Price 18*s.* net.

Dr. Frederick Taylor's admirable text-book for students and practitioners, "The Practice of Medicine," has reached its tenth edition. It fully maintains the high standard of excellence set by the previous editions of the work. There has been some rearrangement of the way in which the infectious diseases have been grouped at the beginning of the volume; and several rare, but interesting, forms of infectious disease have been added, such as rat-bite fever sand-fly fever, and psittacosis. Diseases of the glands with internal secretions have been separated from the diseases of the blood and blood-forming organs, and now receive consideration in a separate section of the book. Several other notable disorders are introduced into the volume for the first time, such as pneumonia due to Friedländer's bacillus—the microbe so often associated with bronchiectasis and with pulmonary conditions that closely simulate tuberculosis in many particulars

—congenital coarctation of the aorta, obesity, and various diseases of the skin. Room has also been found for a notice of Ohm's interesting attempt to obtain graphic records of the heart sounds and pulse tracings simultaneously, which was described at the International Congress of Medicine held in London last year.

To praise this text-book seems almost needless; since its first edition came out nearly 25 years ago it has been the familiar friend of many successive generations of medical students, and its several editions have always presented its readers with a sound and trustworthy account of the medical practice of the day. The commoner diseases receive the fullest consideration, while the rarities of medicine are given brief but adequate notices. In this way Dr. Taylor's volume continues to afford a very happy contrast to the many medical text-books that appear to have been written for what may be called examination purposes, and give more space to a rarity like syringomyelia than to a commonplace of medical practice such as rickets.

A few errors that have crept into the text may be noted in order that they may be removed in the issues inevitably to follow: the name "Médin" on p. 135 should be Medin; the description of the electrocardiograph (p. 607) is erroneous in some particulars; the hybrid term "polyglandular" on p. 923 should surely be replaced by "pluriglandular"; and "goître" might well be now spelt "goitre" throughout, in accordance with modern usage.

The Surgery of the Stomach: A Handbook of Diagnosis and Treatment.

By HERBERT J. PATERSON, M.A., M.C., M.B. Cantab., F.R.C.S. Eng. New and revised edition, with plates. London: James Nisbet and Co., Limited. 1914. Pp. 342. Price 15*s.* net.

Mr. Paterson has written so well on the surgery of the stomach that we are not surprised that a new edition of his work has been called for only a short time after the appearance of the previous issue. The time that has elapsed has not been sufficiently long to make any startling change in the surgery of the stomach, but the author has been enabled to make many alterations in his book, If most of them are not of great importance, this is a proof of original foresight on his part, and it is worth while to notice some of them.

In the earlier edition the operation of gastro-jejunostomy was illustrated with a number of photographs; in the present edition the photographs have been reproduced in pairs for use stereoscopically, and when the stereoscope is employed the details are much more clearly visible. A further change has been the introduction of a number of plates illustrating the value of radiographs in the diagnosis of abdominal lesions. The plates have been made from radiographs prepared by Dr. A. C. Jordan, who has had a very large experience of X ray work of the abdomen.

Mr. Paterson is known to hold the opinion that except in cases of real pyloric obstruction the benefit of the operation of gastro-jejunostomy is due to physiological changes, rather than to the mere formation of a direct passage from the stomach to the jejunum. Some further investigations which he has made have been embodied in the chapter on the physiological effects of the operation. Most surgeons believe that the operation is purely mechanical, but it is not easy on this theory to account for the benefit of the operation in cases where there is no pyloric stenosis, for we know from the evidence provided by radiography that in many cases the food continues to leave the stomach by the pylorus even when the operation has conferred great benefit on the patient. Mr. Paterson holds that the presence of bile in the stomach after the operation is almost if not quite the rule, for he has found that in 99 per cent. of the cases there is an increase of the mineral chlorides in the gastric contents, and he believes that this is due to the mineral chlorides of the bile and pancreatic juice, which gain access to the stomach after the operation. In those rare cases in which gastro-jejunostomy has been "undone" he has noted a decrease in the amount of mineral chlorides. These contentions are supported by a series of analyses and there is certainly much to be said for the view. A further striking effect of the operation is a marked diminution of the total acidity of the gastric juice; this the author ascribes partly to the neutralising effect of the bile and pancreatic juice, but partly to a diminution in the amount of gastric juice secreted.

The book is the product of a careful and experienced surgeon and an original thinker, and this new edition will more than maintain the place in surgical literature which was gained by the first edition.

Local Anæsthesia.

By Dr. ARTHUR SCHLESINGER (Berlin). Translated by F. S. ARNOLD, M.B. Oxon. Illustrated. London: William Heinemann (Rebman, Limited). 1914. Pp. 209. Price 5*s.* net.

THIS well-printed, nicely bound little book contains the best exposition of the action of local anæsthetics that we have read. The fact of its being a translation is only evidenced here and there, mainly by the use of expressions such as a "parulis," not commonly employed in ordinary English text-books.

We are interested to see that Dr. Schlesinger does not hold with the belief that cocaine is always harmless when merely painted on mucous surfaces. There is an excellent discussion of Schleich's infiltration method, and the author shows good reason for dissenting from Schleich's explanation of the way in which his process of obtaining analgesia actually attains its object. Dr. Schlesinger is fully alive to the limitations of local anæsthetics. Discussing the use of local methods in head cases he says with much good sense: "It is, however, not everyone who can bring himself to let his skull be chiselled open while he is fully conscious. One of my patients told me that, though he suffered no pain, the sensations of hammering and boring were so horrible that he would much prefer to be put under chloroform." Similarly for almost all abdominal operations Dr. Schlesinger pronounces against local methods. He is opposed, moreover, although he does not advance his reasons, to the "combined anæsthesia" of local and general agents; so presumably Crile's "anoci-association" would not receive his support, although he does not specifically mention this system. For minor surgery generally Dr. Schlesinger recommends conduction anæsthesia by means of novocaine in 1 or 2 per cent. solution, to which he adds suprarenin to the extent of 1 to 4 drops of a 1 in 1000 solution to each 10 c.c. of novocaine solution. There is a curious misprint of infra for supra

orbital when anæsthesia of the upper jaw and face is under discussion. Dr. Schlesinger states that inflammatory processes heighten insensibility, particularly of the parietal peritoneum. We wonder whether this is borne out by the general experience of other observers.

We can strongly recommend this book as a guide to the practice of local analgesia.

The Early Diagnosis of Tubercle.

By CLIVE RIVIERE, M.D. Lond., F.R.C.P. Lond., Physician to Out-patients, City of London Hospital for Diseases of the Chest, Victoria Park; Physician, East London Hospital for Children. London: Henry Frowde. 1914. Pp. 260. Price 6*s*.

TOO much stress cannot be laid on the importance of the early diagnosis of tubercle, but in order to arrive at a correct conclusion the greatest care is needed, and considerable experience is required before the necessary technique can be adequately acquired. To arrive at a diagnosis from one symptom or from one sign only is to court disaster, and in each individual case a careful study of all phenomena presenting themselves is absolutely essential.

In the volume now before us Dr. Clive Riviere gives a good description of the various procedures necessary in examining patients—adults and children—in order to ascertain the presence or absence of tuberculous disease, especially of the pulmonary variety. His object has been to present shortly and clearly the points whereby an accurate technique in the various methods may be acquired. He very rightly lays stress on such aspects of the normal as are likely to suggest or simulate disease, and he points out where pitfalls are likely to arise. In many works on diseases of the chest sufficient emphasis has not been laid on the importance of recognising the physiological variations which may occur in the character of the breath sounds, and unless these be recognised errors in diagnosis may easily arise. Dr. Riviere draws attention to these points, and especially to the altered characters that may be apparent beneath the right clavicle. He discusses the diagnostic use of tuberculin at considerable length. We entirely endorse his views that the subcutaneous test should only be employed by those whose special knowledge of this branch of work fits them duly to avoid the dangers and correctly to interpret the results. The value of the temperature chart is also noted, and the significance of the opsonic index is duly considered.

The book is well written, and forms a good manual on the subject of the early diagnosis of tubercle.

Physiologie Normale et Pathologique des Reins.

Par L. AMBARD, Chef de Laboratoire de Chimie de la Clinique des Voies Urinaires à l'Hôpital Necker. Préface de M. le Prof. F. LEGUEU. Paris: F. Gittler. 1914. Pp. 329. Price 15 francs.

THE author points out that this is not a complete treatise on the physiology and pathology of the kidneys, as the title might lead one to suspect—e.g., intentionally he has left out the consideration of the renal secretion in cardiac and febrile disease, while albuminuria is almost entirely omitted. Somewhat less than one-half of the text is taken up with an account of renal physiology. The author, besides numerous observations on man, records many of his experiments and of those of his collaborators on the dog. He points out that the kidneys are really "concentrating" organs. Substances which are found in very small quantities in the blood are excreted in a highly concentrated form in the urine—e.g., urea. He devotes many pages to what he calls the "concentration maxima," each substance having its own maximum under certain conditions. Very elaborate tables and numerous experiments are given to show this for urea, sodium chloride, water, and glucose. The concentration maximum is a function of the quality of the renal parenchyma. But the kidneys have another function; they regulate the limits of excretion. The technical methods used for estimating urea, glucose, and sodium chloride are given. "Débits," or the quantities of any substance excreted in a given time, are next dealt with, and the relation between the amounts of the several urinary constituents, as well as the elimination of such substances as ethylic and methylic alcohol and glycerine. The nervous system is regarded as affecting urinary secretion in addition to its purely vaso-motor effects.

The latter half of the monograph deals with nephritis. First there is nephritis with œdema, and other forms without œdema. There are also mixed forms, and, what is important for the clinician, there is a very careful exposition of the prognosis in the various forms of nephritis, as well as an admirable résumé of the effects on the organism of defective renal activity. The last chapter, on the exploration of the renal functions in surgery, is thoroughly practical, and includes a description of the chief methods to be used by the surgeon—e.g., the elimination of methylene blue, phloridzin glycosuria, cryoscopy of the blood, and experimental polyuria, as well as the concentration maximum of urea.

We can cordially commend the study of this interesting and practical monograph to clinicians and surgeons alike who have to deal with renal disease. It is an admirable clinical and scientific contribution to the study of urology.

The History of St. George's Hospital.

By G. C. PEACHEY. Parts III. and IV. Price 5*s*. Parts V. and VI. Price 5*s*. London: Bemrose and Sons.

AFTER the issue of the first two of the 12 parts in which this history was projected, the health of the author became so seriously impaired that the remaining parts were postponed for a considerable period. Now they have been resumed; and, indeed, the four which have lately been added to the series have appeared two at a time. Parts I. and II.[1] dealt with the general conditions of medical science and the relief of the sick poor in the London of the early eighteenth century, and with the circumstances which led up to the foundation of St. George's in 1733, following the schism at the Westminster Infirmary (now Westminster Hospital). Parts III. to VI. contain a most minute and valuable account of the first 20 years' working of the institution. These sections are packed with interesting details which illustrate very vividly the life and the practice of medicine of the second quarter of the eighteenth century. They include, also, painstaking biographies of all the members of the medical staff who served during that epoch. The labour represented by these accounts of old-time physicians and surgeons has obviously been very

[1] See THE LANCET, June 11th, 1910, p. 1624 (Part I.); and Jan. 21st, 1911, p. 173 (Part II.).

great; Mr. Peachey has spared no pains to gather every detail which might throw light upon their careers and has brought an honourable enthusiasm to an onerous task.

The early admission books of the hospital have been lost beyond all hope of recovery; but, fortunately, a practice prevailed during the first two years of the existence of St. George's of entering in the minute books, not only the names of those who recommended patients for admission, but also the names of the latter, the diagnosis of their diseases, and the results of their treatment. Thus an analysis has been rendered possible of the in-patients treated in 1733–1735. They were 1502 in number, and the list includes consumption, 185 cases; rheumatism, 154; ulcers, 128; intermittent fever (possibly malaria from the Chelsea marshes was one of the diseases thus diagnosed), 124. These were the principal groups; lesser ones were dropsy, 59 cases; palsy, 45; nervous disorders, 40; tumours, 35; rupture, 25; fractures, 19; obstructions, 19; ophthalmia, 18; epilepsy, 22. Two other and very interesting items from this list are scurvy, 47 cases; and "leprous," 13 cases. It is impossible to guess whether these last 60 cases would nowadays be diagnosed as they were then; but even if nine-tenths of them fell into other categories, the residue would still indicate a very different prevalence of those two diseases from that which exists at present. Another noticeable feature is the scarcity of all kinds of tonsillitis and sorethroat. This was evidently not due to any refusal to admit infectious cases, since one case of scarlet fever and one case of chicken-pox are among the 1502; but strange to say not a single case of acute faucial angina (with the exception of the scarlet fever case just mentioned) appears to have been admitted to the hospital, unless the 21 unclassified cases of "pain" included some.

In 1749, we learn, the question of burial-ground accommodation led to the purchase by the hospital trustees of a piece of garden land at Brompton for about £500. Here those who died in the hospital were interred, and here also the widow of the gardener grew vegetables which she supplied to the governors for the use of the patients. This burial ground is of interest in that in 1825 it was sold for the erection of Holy Trinity, Brompton, which with its churchyard occupies the whole of the old St. George's burial ground. Many more instances of the curious and antiquarian lore which fills this history could be quoted, but those who are interested in either the state of the medical profession, or of the management of voluntary charities, or of the details of the history of St. George's during the 20 years following 1733, will do well to read Mr. Peachey's pages for themselves.

LIBRARY TABLE.

Tierische Immunität. By Dr. WERNER ROSENTHAL. Braunschweig: Friedr. Vieweg und Sohn. Pp. x.–330. Price 6.50 marks; bound, 7.20 marks.—This book, which forms Band liii. of Die Wissenschaft Series, is intended not for the specialist but for students of medicine and those practitioners who have not made themselves familiar with the comparatively new subject of immunity. It has been written in a popular style, and the author has been careful to distinguish facts from theories and to point out the direct applications of the work on this subject. Though he has not gone deeply into the question of technique the book has been well brought up to date, and we can say that it carries out the original idea of the author in an able manner.

Festschrift des Institut Medical der Al Hayat Kompagnie in Helouan.—This pamphlet of 130 pages was published recently in connexion with the visit of a medical and scientific expedition sent from Berlin to investigate the circumstances of Helouan as a health resort, and particularly to inquire into the alleged benefits to be derived from its desert climate and its thermal springs. Helouan is largely frequented by English, German, and Russian invalids, and a German company, with characteristic business enterprise, has provided hotel accommodation, a sanatorium, and a medical institute for its compatriots. The pamphlet, which is of course in German, comprises five separate articles, two of them being written by Dr. Wilhelm Preminger, chief of the Helouan Medical Institute; the first giving some observations on the results of the treatment of nephritic cases at Helouan, the second dealing with gout in the knee-joint and the effects of treatment by the local sulphur baths. Dr. Max Loewy, a nerve specialist, who apparently divides his time between Marienbad and Helouan, writes on hypnotic suggestion and the limits of hypnotic influence. A short paper with a series of charts or curves is contributed by Dr. Theimert, showing the variations in the amount of albumin, urea, and chlorides excreted by certain patients under treatment in the medical institute, of which he is assistant medical officer. These four papers just mentioned take up 58 pages, but the last paper, written jointly by Dr. Preminger and Dr. Loewy, occupies the remaining 72 pages of the pamphlet, and is entitled "The History and Development of Helouan as a Health Resort." The winter climate of Helouan is dry, warm, and invigorating. The medicinal springs are of three kinds, sulphur, saline, and chalybeate, and can be used internally or externally. The cases which seem to benefit most are those of renal disease, neurasthenia, anæmia, chronic respiratory troubles, gout, and rheumatism. The publication of this last paper seems to have been the main object of the *Festschrift*, which is printed at Cairo by the Société Orientale de Publicité.

Ionic Medication. By LYTTON MAITLAND, M.D Lond., formerly Assistant in the Electrical Department, Charing Cross Hospital. London: The Scientific Press, Limited. 1914. Pp. 102. Price 1s. net.—This is a small volume on the theory and practice of ionic medication, apparently meant for clinical assistants and those working under the direction of a physician. A good deal of the space is taken up with theoretical considerations, but practical matters are dealt with fully and yet concisely. It contains a large amount of sound information within a small compass, and the little book will be found very useful by those taking up the study and practice of this increasingly important branch of treatment.

Das Freilufthaus: ein neues Bausystem für Krankenanstalten und Wohngebäude. By D. SARASON, H. C. NUSSBAUM, H. BECHER, and N. BARDSWELL. With 6 plates and 32 figures in the text. Munich: J. Lehmann. 1913. Pp. 122. Price, paper, 5 marks; bound, 6 marks.—In 1901 Dr. Sarason devised a system of building sanatoriums and homes for tuberculous patients, with the special object of supplying each floor with an open-air balcony. The main idea, which he claims as a novelty, is that each floor shall be stepped backwards 8 ft. or so on its southern aspect, so as to

give each floor a balcony 8 ft. wide; thus the ceiling of the ground floor is 8 ft. wider than that of the first floor, 16 ft. wider than that of the second floor, and so on. He appears to contemplate the erection of sanatoriums five or six storeys in height. Many of his rooms and passages appear to be unduly airless and dark. In one of his wards with 16 beds the washing arrangements consist of three basins and a bath tucked away in one corner. Most of his bathrooms are fitted up as water-closets also; some of his bathrooms and water-closets appear to ventilate into reading-rooms or passages, but to have no outlet to the external air. The book will be of interest to architects and specialists in tuberculosis, but the buildings described hardly appear suitable for erection in this country.

Extraction of Teeth. By F. COLEMAN. Second edition. With 57 illustrations. London: H. K. Lewis. 1914. Pp. 167. Price 3*s.* 6*d.*—The second edition of this book has been largely rewritten, and the author includes some instructive and practical illustrations. The operation of tooth extraction is, we fear, too often undertaken by those possessing practically no knowledge of the parts involved, with the result that although the tooth is removed an undue amount of damage of the hard and soft tissues is caused. In this volume Mr. Coleman deals in an able manner with the whole question, and we strongly recommend the book to those medical practitioners who are from time to time called upon to perform the operation of tooth extraction.

MISCELLANEOUS VOLUMES.

HE is a bold man who attempts to translate "Pierre Loti." The clear, concise, almost rhapsodical French of M. Viaud is very difficult to render into English. So with some success the renderer of *Morocco*, by PIERRE LOTI (translated from the French by W. P. BAINES, with 12 illustrations in colour and tone. London: T. Werner Laurie. Pp. 335. Price 7*s.* 6d. net), has kept very closely to the French style, frequently only transferring individual words from one language to the other. This volume is a charming account of a French diplomatic mission's journey to Fez in 1889, long before the beginning of that systematic subjugation of Morocco which is being completed to-day. As we might expect, we have afforded us a glowing and vivid picture of a country which was 20 years ago more Oriental than the East. To gauge Morocco from Tangier alone is like gauging Egypt from Port Said or Cairo. If, as Pierre Loti says, the sense of translation into anterior times strikes the visitor to Tangier, far more does it strike those who land in the towns of the Atlantic coast—Salee, Mazagan, Mogador, Arzila—and more still those who penetrate to Fez or Marakesh. The immense antiquity of Morocco must impress itself on the reader, as it has on the author. The southern capital of the country had water supplied in pipes to every house centuries before any European city and when the aqueducts of Rome had been all broken down. There are excellent illustrations to this volume, in no degree too bright in colour. Everyone who can should visit Morocco as soon as possible, for the accessible parts of its large area will probably rapidly be de-orientalised in the next few years.

In the *House on Wheels* (London: Chapman and Hall, Limited. 1914. Pp. 150. Price 2*s.*) Dr. ELIZABETH SLOAN CHESSER writes most entertainingly—e.g., the incident of the paraffin and the pie (p. 52)—and also instructively of her "trek through Kent" in a caravan. It is not until we arrive at Chapter VI. that we begin to realise the *arrière pensée* of the book—for there we learn that "the modern caravanner belongs to one of three types, the holiday maker, the gipsy, or the propagandist"—and though we ought perhaps to have had our suspicions aroused at the outset by the name of the caravan, the "Florence Nightingale," only now do we realise that this caravanning expedition, which we have been so heartily enjoying, was no mere holiday jaunt, but part of the praiseworthy campaign of the Women's Imperial Health Association. From here on we begin to get glimpses of that work in the experiences related. An appendix gives a few hints on caravanning, and directs the reader's attention for further information on that subject to the Caravan Club, whose quarters have been removed since this book was published to 108, Long-acre, W.C.—— There is a literary charm in the direct conversational style of *Autolycus in Arcady*, by HERBERT W. TOMPKINS, F.R.Hist.S. (London: George Allen and Co., Limited. 1914. Pp. 248. Price 3*s.* 6*d.* net). His discursive remarks "from the journal of a wandering bookman, set down between Guildford and New Romsey," to quote the title page, on men and things, books and authors, Pepys, Boswell, Montaigne, and Lamb make delightful reading. On a rambling tour a more pleasant partner than Autolycus would be hard to imagine, but, failing that gentleman's personal presence, we must be content with the reminiscences that he has gathered for us on his wanderings, and the book itself will prove an enjoyable companion either in an arcadian shady nook when the days are long or by the fire on winter evenings.

In *The History and Economics of Indian Famines*, by A. LOVEDAY, B.A. (London: G. Bell and Sons, Limited. 1914. Pp. 163. Price 2*s.* 6*d.* net), which is an enlargement of the Le Bas prize essay of last year, with some modifications, the author quotes the records of the earlier famines, deals shortly with the great disaster in Bengal and Orissa in 1770, and the methods of relief adopted by the East India Company, and in more detail describes the organisation and protective measures adopted at the present time. There are few generalisations applicable to the whole of India, but one is that over two-thirds of its population are occupied in an industry "almost wholly dependent upon a sufficient and well-distributed rainfall." Another important point is the poverty of the cultivator—that is, of the majority of the population. The income per head was estimated at £2 per annum in 1880, and it is not thought to have much increased since. The native is nevertheless extravagant, and is consequently to an enormous extent in the hands of the moneylenders. The old custom of hoarding grain to carry the people through a bad year has largely gone out with increased facilities for transport. The Government (by financial decentralisation and by instituting the Famine Insurance Fund of 1877) and private charity (by the Indian Peoples Famine Trust) have done a great deal towards guarding against disaster in the future; but the ultimate solution lies, as Mr. Loveday insists, in individual frugality, and this depends on carrying out the principle of coöperation in agriculture, as in other industrial pursuits.

We have rarely read a more temperate and restrained, and at the same time cogent and forcible, appeal for a wise consideration of the whole subject of the White Slave Traffic and the social aspects of the venereal diseases than *The Social Disease and How to Fight It* (London: Longmans, Green, and Co. 1914. Pp. 87. Price 1*s.* net), by LOUISE CREIGHTON. It is admirably balanced against either extreme. While recognising that the first need is for knowledge, Mrs. Creighton realises that, as everyone cannot know everything at once, selection is requisite, not only between who shall know, but also to decide how much each should know, for "it would be foolish to deny that there are dangers in the indiscriminate distribution of knowledge." Ignorance, she says, has proved so dangerous that it cannot be allowed to go on, but it is well that each should know only just so much as is useful to him. "There is no need to know all the details of disease in order to avoid it; there is no need to dwell upon its horrors, still less to speak about them. ..... All are not called upon to study disease as if they were doctors." The author insists on the need for dethroning the double standard of morality, but she realises that that can be done only by leading men and women to fight and work together to that end. "The mistake of so much that has been said lately on this subject is that it has been treated as if it were a woman's question, a matter in which women had to fight against men to maintain the rights of their sex." In this struggle, as she rightly says, women have not got to fight against men, but to win more men to fight with them. But while there must be a fight and all must take part in it, all are not called to take the same part. In teaching girls

about the dangers they may run she points out that care must be taken that the teaching does not arouse panic, the nervous fear that goes out to meet dangers or the hysteria that imagines them. Above all, "those who want to work for purity must be careful about the purity of their own souls." The book ends on a hopeful note. It should be widely read.——A series of admirable lectures on *How to Keep Fit* (London: Jarrold and Sons. Pp. 131. Price 1*s.* net) can also be warmly commended. They are as follows: Alcohol in Relation to Health, by Mr. W. McAdam Eccles; Diet, by Sir Robert W. Burnet; Clean Mindedness, by Sir Dyce Duckworth; The Value of Discipline in the National Life, by Sir R. Douglas Powell; Dress, by Mr. James Cantlie; and Chastity, by Sir Francis H. Champneys. It would be possible, perhaps, to find a few statements here and there with which all would not agree, but, speaking generally, the lectures are models of their kind. The paper of Sir Francis Champneys deserves special commendation. It is a plain-spoken, yet entirely reverent, treatment of the sexual difficulty. The articles generally are characterised by directness, moderation, and sound sense.

That greater diffusion of knowledge as to the many evils which result from the undisciplined use of the sexual instinct is needed will not be denied, but how such diffusion should be effected is a question upon which there may be a marked difference of opinion, for many who will agree with Mrs. Creighton on her general thesis would differ perhaps from her in the places where limitations to knowledge and its spread should begin. Mr. FRANK G. LAYTON, M.R.C.S. Eng., the author of *Philip's Wife*, a play in three acts (London: A. C. Fifield. 1914. Pp. 64. Price 1*s.* net), is probably well within the mark when he says in his preface that it is unlikely the play will be produced in England—at any rate for a long time, though, as he also says, "the play is not improper." Philip's wife, who gives the title to the play, is the daughter of a clergyman who is much opposed to any teaching concerning sexual matters, and who is antipathetic to medical men. Philip, the son of a worldly and socially ambitious merchant, has been "indiscreet" in his college days. Anxious for an early marriage and urged by his father he scorns medical advice and becomes the victim of a quack. The result of this defiance of medical authority in the supposed interests of social position is well told. The bigotry of the clergyman is perhaps a little overdrawn, while the conversations between the practitioner and the consultant do not ring quite true, but the play is eminently readable, though the subject is somewhat unsavoury. Mr. Layton states in his preface that his play was written before he had ever heard of Brieux's famous *Les Avariés* (*Damaged Goods*. Same publishers and price. Pp. xxiii.–65), of which a new translation by JOHN POLLOCK has just appeared, with interesting preface and foreword by Mr. G. Bernard Shaw and Mrs. Bernard Shaw respectively.

JOURNALS AND MAGAZINES.

Jahreskurse für Aerztliche Fortbildung. Munich: Lehmann. Price 18 marks per annum.—The May number is devoted to a review of neurology and psychiatry. Professor Marburg writes on the recognition of operable tumours of the spinal cord, including localised spinal meningitis serosa. Amongst other signs mentioned are the albuminous and often yellowish character of the cerebro-spinal fluid, the radicular distribution of the pain, paræsthesia, and palsy, and the Brown-Séquard dissociation of sensation. It is pointed out how accurately all the symptoms may be mimicked by spinal meningitis serosa, either diffuse or circumscribed in the form of cysts by adhesions, but fortunately the treatment is the same, namely, laminectomy. The indications for Förster's operation of posterior rhizotomy are then discussed, and a general summary of recent advances in neurology follows. The articles on mental diseases include one on prognosis, with especial reference to general paralysis of the insane treated by salvarsan given by various means; great improvement is reported in some cases. The prognosis in dementia præcox and other conditions is also debated. The pathological anatomy of various forms of mental disorder has received much attention lately, and some important findings are discussed, such as the demonstration of spirochætæ in the brain in parasyphilitics. The final article deals with serology in mental disease.—Diseases of children form the topic in the June number, and the great bulk is devoted to a consideration of the heart in childhood, by Langstein and Putzig. The normal condition of the heart in infancy is first described, including the electrocardiogram and X ray findings. Then follows a discussion of the import of deviations from the normal rhythm, such as extrasystoles, tachycardia, gallop rhythm, and heart-block; next, the writers deal with hypertrophy, dilatation, and congenital heart disease. Skiagrams appear to be used extensively in making the diagnosis of hypertrophy. Pericarditis and affections of the myocardium and valves are also considered. The usual general review of children's diseases follows. There is mention of what German observers are calling "spasmophilia," including tetany of alimentary origin and the allied spasmodic affections. Cow's milk and calcium salts constitute the best treatment.

The American Journal of Tropical Diseases and Preventive Medicine, Vol. I., No. 10 (the official organ of the American Society of Tropical Medicine).—This number contains three editorials and three original articles in addition to the usual notes and comments and the reviews of current literature. The first of the editorials is signed by Dr. C. C. Bass, of Tulane University, and deals with hookworm disease, which is characterised as a world-disease of long duration, and one "which destroys hundreds of thousands of lives yearly, and leads to the loss of countless millions of money through the reduced efficiency of its victims." Dr. Bass calculates that out of the 1,600,000,000 of people inhabiting the globe more than 4,500,000 are at present suffering from ankylostomiasis. Even now, he says, "man is pouring daily into the ever-empty stomach of this blood-sucking parasite a veritable river of his life-blood." The second editorial deals with preventive medicine and syphilis, while the third discusses prostitution in Europe, and is signed by Dr. Isadore Dyer, one of the two joint editors of the journal. The first of the original articles is also on the subject of hookworm disease or ankylostomiasis, and is illustrated by two plates. It is contributed by Passed Assistant Surgeon C. M. Fauntleroy, of the United States Public Health Service. Incidentally he mentions that during an investigation of the disease in some rural districts of the Southern States no fewer than 21,308 houses were found which had no privy at all. It is, therefore, not surprising that the infection has become widespread in that region. Dr. Fauntleroy remarks that an estimate of more than 2,000,000 of cases of ankylostomiasis in the United States is probably not an exaggeration. The second article is on beri-beri, by Dr. Paul G. Woolley, of the University of Cincinnati, and in it he gives a fairly good résumé of the present state of our knowledge of this important disease. The third article is on preventive vaccination against typhoid fever, and is contributed by Professor A. Chantemesse, of Paris; it has already been published in *Le Monde Médical*, and has been translated for the journal by Dr. Charles Chassignac, of New Orleans. Professor Chantemesse, like many more experts, prefers a heated monovalent vaccine to a polyvalent one.

Æsculape (Paris: 41, Rue des Ecoles. Foreign subscription 15 francs; single number 1.50 francs).—The June number of this illustrated review of the arts and letters in relation to medicine and science contains some interesting items. Professor Félix Regnault discusses the medico-psychologic characteristics of some of the work of Michael Angelo—the tombs of Julian II. and Lorenzo dei Medici, the Aurora, and the Twilight.—Dr. Bonnette gives some interesting details of the health and medical attendants of the great Napoleon.—Dr. P. Barutaut begins an article on the legends of the sirens, illustrating it with examples of symmelus sympus, the condition on which the siren conception is based.—Dr. E. Sirard gives a first instalment of a biographical account of Théophraste Renaiedot of Montpellier.—The article by Dr. Lucien Libert deals with the cultus of St. George and the treatment of insanity among the Greeks, and pays special attention to the monastery of St. George on Prinkipo, in the Sea of Marmora.—Dr. P. Finet publishes sonnets on François Helme and Robert Marquézy, and Dr. Jean Avalon gives an account of Yong-Fou, a courtesan of Peking; of Jovau Céleste, the favourite of the emperor; and of "M. de Pekin," the executioner of Peking, with a description of the revolting atrocities perpetuated on Fou-Tchou-Li, the attempted assassin of a

prince.—There is also an account in the supplement of Mme. de Miramion, whose hôtel, now the central pharmacy of the hospitals, as was mentioned in the February number (reviewed in THE LANCET of April 4th), it is desired to acquire for a Museum of the History of Medicine in Paris.

The Hospital Gazette.—The June issue is a special number devoted to historical and constructional accounts of the Birmingham hospitals. It seems that Birmingham is possessed of almost as great a variety of institutions as London. Mr. Howard J. Collins describes the General Hospital and Mr. Arthur Hulme the Queen's Hospital. The Free Hospital for Sick Children, the Eye Hospital, the Hospital for Women, the Ear and Throat Hospital, and the Hospital for Skin and Urinary Diseases, all of which have "Birmingham and Midland" as part of their titles, are described by their secretaries, as also are the Royal Orthopædic and Spinal Hospital, the Birmingham Dental Hospital, the Birmingham and Midland Counties Sanatorium, and the Moseley Convalescent Hospital for Children. The number closes with a history of the convalescent homes of the Birmingham Hospital Saturday Fund at Tyn-y-Coed (men) and Marle Hall (women), Llanrhos; the Red House, Great Barr (children); and the Romsley Hill Home (Sir William Cook memorial) for Consumptives.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

THE annual meeting of this association took place on July 2nd at Burnley. The MAYOR (Alderman J. Sellers Kay), in welcoming the members in the council chamber of the Town-hall, alluded to the dispute which had been going on in Burnley for some 18 months between the Poor-law medical officers and the Poor-law authorities. He held no brief for either party, he said, and if as Mayor he could be of any assistance in bringing about a settlement, he would be pleased to render that assistance.

Surgeon-General G. J. H. EVATT, President of the association, then took the chair, and spoke first of the pleasure with which he had inspected the Poor-law hospital in Burnley. He had also visited the general hospital, and as far as he could see the Poor-law hospital was the better. The council of the association, he said, regretted that friction should have taken place between the Poor-law medical officers and the authorities, and thanked the Mayor for the offer of help.

Mr. A. E. BIRD, honorary secretary of the Burnley Division of the British Medical Association, extended a welcome to the meeting.

After the minutes of the last annual meeting had been read, confirmed, and signed by the chairman, the annual report of the council and their report on the Poor-law Institutions Order were unanimously received and adopted, and the honorary secretary was instructed to send a copy of the latter to the Local Government Board. The balance sheet for the year was then considered by the meeting, and its details were explained by the honorary secretary, and it was unanimously approved. Surgeon-General Evatt, president, and Dr. Major Greenwood, honorary secretary, were re-elected to their posts for the ensuing year with acclamation. Mr. A. A. Napper was re-elected treasurer and Dr. A. Withers Green auditor. Mr. D. B. Balding was also re-elected chairman of council. The following were elected members of council for 1914–15:—Mr. W. Holder (Hull), Mr. J. B. G. Gidley-Moore (Fyfield), Dr. Lloyd Brown (Tunbridge Wells), Mr. P. Withers Green (London), Mr. George Jackson (Plymouth), Dr. A. Drury (Halifax), Mr. C. Biddle (Merthyr Tydfil), Dr. C. Thackray Parsons (London), Dr. W. Brown (Bristol), and Dr. A. P. Agnew (Burnley).

Mr. C. E. BYGRAVE, clerk to the guardians of the Blackburn Union, then read a paper on Recent Legislation Affecting the Duties of Poor-law Medical Officers. He attributed the diminution in the number of persons in receipt of out relief between 1910 and 1911 to the removal of old-age pensioners from the outdoor relief. The need for institutional medical treatment did not seem to be diminished as a result of the National Insurance Act.

Dr. MAJOR GREENWOOD read a paper on the Future of the Poor-law and the Poor-law Medical Service. He believed, he said, that in the future the work would develop more and more on institutional lines, and all indoor Poor-law medical officers would tend to become whole-time officers. Unions might combine to create a common infirmary, or the Poor-law infirmary might become a State institution and be utilised in connexion with State schemes for changes in the general medical practice of the country. The National Insurance Act was considered by many to be a step in that direction.

In the evening the annual dinner was held at which Surgeon-General Evatt presided over a good assembly, having the Mayoress (Mrs. Sellers Kay) on his right hand and the Mayor on his left.

MEDICINE AND THE LAW.

Proceedings under the Apothecaries Act, 1815.

AT the Bow county court on June 29th the Society of Apothecaries recovered a penalty of £20 against John Charles Purdue, described as a medical herbalist, of 28, Roscoe-street, Canning Town, for a breach of the Apothecaries Act, 1815, in that he had acted and practised as an apothecary or medical practitioner in attending and medically treating the infant daughter of Arthur Thompson, of 21, Scott-street, Canning Town, whose death in January last was the subject of an inquest conducted by the local coroner. It appeared from the evidence that the child had become ill on Tuesday, Jan. 27th, and was taken by her mother to the defendant's shop, who examined her and said that she was suffering from pneumonia. He further gave the mother medicine for the child and oil to rub her chest with. He was again summoned by the mother to see the child on the same afternoon, and then administered further medicine, also using the stethoscope and taking the child's temperature with a clinical thermometer. The defendant attended the child further on the Wednesday, Thursday, and Friday, on the evening of which day the child died. The defendant was paid the sum of 2s. in respect of his medicine and attendance. It appeared from the medical evidence given at the inquest that the child actually died from meningitis. At the hearing of the case the defendant's counsel endeavoured to argue that he was protected by a statute of Henry VIII. sometimes called the Herbalists Act. The county court judge held that the statute was inapplicable and that there had been a clear breach of Section 20 of the Apothecaries Act, 1815, and he consequently gave judgment for the society with costs on the higher scale.

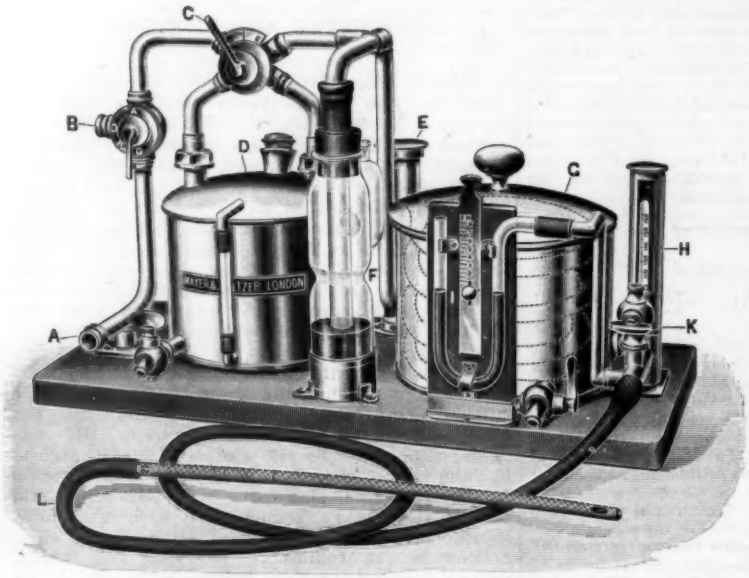
THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION AT SAN FRANCISCO.—This exposition, which will be opened on Feb. 20th, 1915, in view of the fact that the canal could not have been successfully carried out but for the aid rendered by medical and sanitary science, will devote much attention to medical matters. Among the exhibits will be hospital wards in the tropics, a huge model of a mosquito by Philip Rauer, to demonstrate the dangers of the insect, a model emergency hospital, civic and health exhibits from the Urban Exhibition of Lyons, and the whole of the British exhibit from Ghent, as well by Argentina, Japan, France, Germany, the Philippines, and 30 other countries. Large industrial concerns will display their health and human welfare and life protecting methods. The Rockefeller Foundation will display measures for the eradication of hookworm. Other bodies taking part are the Russel Sage Foundation, the Carnegie institutions, the Social Survey, the American Academy of Medicine, the National Commission on Mental Hygiene, several special medical organisations, antituberculosis societies, the International Congress of Nurses, and many others. There will also be a dental congress.

New Inventions.

APPARATUS FOR INTRATRACHEAL ANÆSTHESIA.

THE principles and advantages of intratracheal insufflation are now well known. Apart from its use as a method of artificial respiration and in thoracic surgery, it has been found, for example, to be invaluable in the surgery of the head and neck, and more especially in operations on the thyroid, mouth, pharynx, and nasal passages. Various apparatus have been devised, and the description of one which I have used for 18 months appeared in the *British Journal of Surgery* for July, 1913, and in the *Bristol Medico-Chirurgical Journal* for December following. Alterations in this have been made from time to time, and with the object of still further reducing cost and weight the present apparatus has been made for me. It is compact, light, portable, and easy to manipulate. It can be used either with a foot pump or with an electric motor and pump. (Fig. 2.) The former is provided with an air filter, which serves the double purpose of freeing the air from dust, &c., and of converting the intermittent air stream into a constant one. The foot pump does not give such a regular anæsthesia as a mechanical device, such as a motor, and entails rather hard work upon the anæsthetist during a long operation, but it is a very fair substitute. Where the motor is used, a foot pump should always be at hand in the rare event of a failure of the electric current.

FIG. 1.



The ether apparatus (Fig. 1) has all its parts readily accessible, and the ether chamber D, made of metal, can be easily detached and cleaned. There are very few rubber connexions to get out of order, and the apparatus can deliver a very concentrated ether vapour. The air stream enters at A and mixed with oxygen, if necessary, by means of the tap B, can be made to pass by a turn of the regulating tap C either wholly over the ether or in any desired proportion, or wholly to miss the ether. The air-ether mixture, or air alone, then passes along to the moistening chamber E, thence to the warming vessel G, and so on to the catheter L. A manometer, I, and mercury safety valve, F, are placed in the circuit, the latter being designed with an overflow cup to catch any mercury blown up when the pressure exceeds, e.g., 20 mm. Hg. The safety valve can also be set to blow off at other pressures. The temperature of the outgoing stream of air and ether can be ascertained by means of the thermometer H. A tap, K, is provided for reduction at regular intervals in the volume of the air stream. The water in the warming chamber can be readily kept warm (usually 120° F. is the right temperature) by renewing it at intervals of about 10 minutes. An electric heater has not been supplied because of the additional cost; a spirit lamp is probably quite safe if properly guarded, but I have not cared to run any risk with so much ether close at hand. This part of the apparatus weighs just over 9 lb. and is carried in a light case made of 3-ply wood.

The motor (Fig. 2, O), of 1/16 h.p., must be chosen to suit the special voltage. In my own practice, I have found it a convenience to use a motor of 105 volts continuous current, with a carbon lamp in the circuit, so that the apparatus can be run on any continuous current from 100 up to 250 volts. The motor drives a rotary pump, P, which sends a constant stream of air through the filter R. The speed of the motor and strength of the air blast are regulated by the resistance N. A plug, M, is for connexion to the electric main.

My thanks are due to Messrs. Mayer and Meltzer, of Great Portland-street, London, W., for the care and trouble they have taken in making th s apparatus, the special catheters, and the direct laryngoscope, which is a modification of Hill's well-known pattern.

FIG. 2.

Queen Anne-street, W. FRANCIS E. SHIPWAY, M.D. Cantab.

THE LANCET.

LONDON: SATURDAY, JULY 11, 1914.

Royal Commission on Venereal Diseases.

THE Commissioners appointed to inquire into the prevalence of venereal diseases in the United Kingdom, a strong and well-chosen body, have been taking evidence now for eight months as to the effects upon the health of the community of these conditions and as to the means by which such effects can be alleviated or prevented. Short, sometimes very short, abstracts of this evidence have been regularly published in THE LANCET, so that our readers are already familiar with the directions which the inquiry has so far taken. It was understood that no return to the policy or provisions of the Contagious Diseases Acts of 1864, 1866, or 1869 was to be regarded as falling within the scope of the inquiry, but with that limitation the Commission has made an extremely all-round investigation.

An interim report of the proceedings up to April 6th has now been issued. Up to that date the Commissioners had held 32 meetings and examined 36 witnesses, with the result that they found the branches of inquiry involved in the terms of reference to be so numerous, and in some cases so closely interrelated, that it was impossible to deal with them separately, completing one branch before entering upon another. Many lines of investigation are still incomplete, and evidence is required from Government departments, as well as from private individuals able to speak with expert knowledge, before any general or special conclusions can be arrived at. Statistics are being prepared for the Commissioners by certain hospitals and institutions which will have to be taken into serious count by the Commissioners before they can commit themselves to any recommendations. But they are unanimously of opinion that it may be an advantage to the public if the minutes of the evidence taken between Nov. 7th, 1913, when the Commission held its first sitting, and April 6th, 1914, were now issued to the public, a point of view with which we are heartily in accord. The sittings of the Commission were held privately, with the idea presumably that possible witnesses might be embarrassed by publicity when striving to assist the inquiry in some of its phases. There is no indication in the interim report that this trouble would have arisen, and an appeal to the proprietors of responsible journals, made when the sittings commenced, would have probably removed apprehension on this score. The objections to the policy of closed doors are, however, largely removed by the publication in accessible form of the proceedings.

We recommend to all our readers the perusal of the interesting evidence given by well-selected witnesses which is appended to the first interim report.[1] When the conclusions of the Royal Commission are arrived at, and the consequent suggestions come under the consideration of Government, the procedure adopted will necessarily have a direct medical bearing. The public will expect the medical profession to give advice as to the value or practicability of any legislative steps that may be taken. The prevention of the ravages of venereal diseases is a subject in which at last the inhabitants of this country are seriously interested. The brief abstracts of the evidence taken by the Royal Commission which have so far appeared have helped to spread and also to intensify that interest, and we may be certain that the termination of the labours of the Commission will be the signal for the introduction of legislation of the greatest importance and also of the greatest delicacy. The difficulties surrounding both notification and the institution of clinics for treatment, which have to be faced, are certain to lead to the expression of strong opinions, and it is to the medical profession that the public will look for guidance.

Artificial Parthenogenesis and Fertilisation.

RÉAUMUR, BONNET, and other naturalists of the eighteenth century established the fact that plant lice bring forth live young without pairing. In 1845 the observations of DZIERZON on parthenogenesis aroused the greatest interest. He was led to the conclusion that male bees—the drones—arise from unfertilised eggs, workers and queens being the issue from fertilised eggs. When a queen bee after the so-called nuptial flight lays an egg in the larger drone cell, the egg passes through the oviduct without any sperm being pressed out from the receptaculum seminis; but if laying an egg in a worker cell, a trace of sperm is pressed out on the egg and so the egg is fertilised. Parthenogenic phenomena have been known through many observations to occur in certain butterflies, but it was the investigation of the natural parthenogenesis of the Bombyx mori, or silkworm, which formed the starting point of artificial parthenogenesis, with its array of facts and suggestions that may come to be of high significance in medicine.

The next step was taken when HERTWIG about 1892 observed that the unfertilised eggs of certain sea urchins may show the beginning of even cell division if they remain long enough in water. In the same year Professor LOEB began his now classic

[1] Appendix to the First Report of the Royal Commission on Venereal Diseases (Minutes of Evidence). London: Wyman and Sons, Limited. Price 3s. 8d.

investigations on artificial parthenogenesis, employing chiefly the eggs of certain sea urchins. In his admirable volume, which has recently appeared,[1] he gives us step by step the evolution of his ideas on this subject and shows how he put them to the test of experimental investigation, and by this means opened up an entirely new field. First arose the idea whether it were not possible to cause unfertilised sea urchin eggs to develop into larvæ after altering the constitution of sea water, such as by the addition of salts, acids, or alkalies. This was shown to obtain. There is but one criterion which enables us to decide whether the agent has an effect upon the egg similar to the spermatozoon, and that is development of the egg into a larva. The mere initiation of cell division is not sufficient. Professor LOEB gives an insight into the physico-chemical nature of the process of development, and his book is intended not only for the zoologist, but more especially for the pathologist, and chemist. The unfertilised egg dies in a very short time—hours or weeks; the fertilised egg lives indefinitely, and Professor LOEB shows that for the "mysterious complex" called a living spermatozoon there may be substituted well-known chemical and physical agents. The spermatozoon causes two kinds of effects—one development and the other transmission of the paternal characteristics to the developing embryo. It is probable that these effects are connected with quite different materials in the sperm. It is possible with heterogeneous fertilisation to obtain only the developmental result. Without oxygen the fertilised egg can neither segment nor develop. The formation of a fertilisation membrane round an egg is one of the fundamental facts of egg development. In 1905 Professor LOEB found that a short exposure of an egg to a solution of a fatty acid—e.g., butyric—in sea water led to the formation of a typical fertilisation membrane, as do many other substances, and indeed all hæmolytic agents—to quote his words, "all hæmolytic agencies effect the activation of the unfertilised egg, and this activation consists in a cytolysis of the cortical layer of the eggs." Another process is still required, a corrective process, since the membrane formation alone tends to rapid disintegration of the egg. This second process consists in submitting the egg for a short time to a hypertonic solution containing oxygen or for a longer period to sea water free from oxygen. The most surprising fact, however, in our present knowledge of artificial parthenogenesis is that the blood even of mammals and the tissue extracts of many different species will cause the fertilisation of the unfertilised egg of the sea urchin (and other animals) to form a fertilisation membrane, which will develop if subsequently treated with a hypertonic solution, while the blood and tissue extracts of their own species have no such effect. The efficacy of blood serum may be increased by the addition of $SrCl_2$ to the serum.

The subject of heterogeneous hybridisation, the effects of radium on the sperm, the combination of artificial parthenogenesis and fertilisation with sperm in the same egg and the conditions for maturation of the egg are all subjects of importance to scientific medicine, now that the need for a better understanding of heredity is generally recognised. Professor LOEB supplies also an extensive array of facts on artificial parthenogenesis in the eggs of starfish, annelids, molluscs, and frogs, and also in plants; he describes the preservation of the life of the egg by the act of fertilisation and the relations between artificial parthenogenesis and heredity, and discusses the question as old as the time of LEEUWENHOEK, Can an embryo develop from a spermatozoon?—a question that he finds cannot yet be answered in the affirmative. It would be difficult to estimate the far-reaching effects of the results of his experiments. They mark a new era in the study of fertilisation, as well as give a new impetus to those who see in so-called vital phenomena a large field which day by day is gradually becoming more circumscribed as the facts of physics and chemistry are seen to apply to the elucidation of many phenomena hitherto recognised as vital. We have to thank Professor LOEB for a brilliant and suggestive monograph—a monograph that will prove a good argument for those who desire to see our medical students equipped with a thorough knowledge of the facts of physics and chemistry that bear directly on the problems of biology. Professor KING'S admirable translation brings Professor LOEB'S work within the general scope.

[1] Artificial Parthenogenesis and Fertilisation. By Jacques Loeb, Member of the Rockefeller Institute for Medical Research. Originally translated from the German by W. O. Redman King, Assistant Lecturer in Zoology at the University of Leeds, England. Supplemented and revised by the Author. London: Cambridge University Press; Chicago: The University of Chicago Press. 1913. Pp. 312. Price 10s. net.

Joseph Chamberlain.

BY the death of JOSEPH CHAMBERLAIN at the end of last week, after a practical retirement for eight years, the country has been generally stirred. Admiration at his achievements has been in no way stifled by the fact that in certain obvious directions the country eventually refused to follow his course; the singleness of purpose, the courage and tenacity, the incisiveness of speech and action of this great man, have been vividly recalled to us by his final removal from the scene of his activities. It would not be easy for either practised historian or political contemporary to prophesy exactly what position JOSEPH CHAMBERLAIN will occupy in the minds of posterity as a statesman, but as the greatest of Colonial Secretaries he will be remembered, and in this capacity medicine will always do him honour.

Only so recently as June 23rd the Secretary of State for the Colonies, Mr. LEWIS HARCOURT, unveiled at the Albert Dock Hospital of the Seamen's Hospital Society two bronze portrait reliefs of JOSEPH CHAMBERLAIN and his son, Mr.

AUSTEN CHAMBERLAIN, in commemoration of their magnificent services in the cause of tropical medicine and preventive hygiene, and more especially in the establishment of the London School of Tropical Medicine. This school, to which the adjacent Albert Dock Hospital affords opportunities for clinical work, was founded and endowed chiefly through the efforts of JOSEPH CHAMBERLAIN, who as Secretary of State for the Colonies early realised that one of the bitterest difficulties in imperial administration, and one of the chief obstacles to the development of the tropical and subtropical dependencies under the British flag, lay in the devastations caused by diseases peculiar to the regions. The proof that malaria was not an inherent factor of tropical residence, but due to an avoidable cause, led him at once to grasp the probability that most, if not all, of the chief tropical diseases might be avoidable as the result of especially directed research. The propagation of malaria by the bites of an infected insect might have its other pathological counterparts. Taking counsel mainly with Sir PATRICK MANSON, at that time medical adviser to the Colonial Office, he determined on the organised prosecution of such research, and with the energy that marked his prosecution of political ends at once set about realising his plans. In May, 1899, he presided at a banquet organised in behalf of the endowment of tropical research when there was raised the sum of £15,000, with which in a few months laboratories were erected in the neighbourhood of the Albert Dock Hospital, and the London School of Tropical Medicine was opened, in which 70 students enrolled themselves. By 1905 the school, whose utility had been apparent from the first, had become an established success, and had outgrown its accommodation. In that year CHAMBERLAIN again came forward and raised a further £10,000, which provided a library, a museum, and a special tropical ward, whereby the number of beds for clinical study was raised to 50. His efforts attracted private donors, while grants were made by the Treasury, and an annual contribution of £850 towards the working expenses was sent by the Crown Colonies in appreciation of the benefits conferred by the school. We need not expatiate on the value of the work done by the London School of Tropical Medicine, but every development of that work has been a stone in CHAMBERLAIN'S memorial pillar. Commissions and research workers were soon sent out to various parts of the world to prosecute special researches on the spot. Malaria, sleeping sickness, sprue, guinea worm, tropical dysentery, and ankylostomiasis have all undergone continuous investigation with great gain to the health and saving in the lives of those whose duty calls them to labour in tropical climates. What better evidence can be adduced of this gain than the fact that the death-rate of the West Coast of Africa, of erstwhile terrible notoriety, has fallen from 28 to 8 per 1000, while the number of officials annually invalided has dropped from 62 to 28? The number of students in the London school is now nearly 200; 1800 have had their training there, and of these some 700 are bringing the special knowledge thus acquired to the service of their country in the Colonial Medical Service. That the country is now fully alive to the great benefits conferred on it by the London school is shown by the fact that within a few months Mr. AUSTEN CHAMBERLAIN has been able to raise a further sum of £73,000 for endowment of the school.

In CHAMBERLAIN'S achievements in the field of tropical medicine are clearly to be discerned all the qualities of personal character which lift the statesman above the politician—a spaciousness of view to envisage a problem as a whole, insight into the underlying factors of success or failure, knowledge of men to select those most competent to work effectually in the attainment of the end, forcefulness to attach them to his aims, clarity of expression to communicate his visions to the world at large, and a whole-hearted and single-minded devotion to the highest and widest aims untinctured with mere Chauvinism or self-seeking. As his field of endeavour widened from municipal to national, from national to imperial, from imperial to world-wide betterment, his ideals expanded without changing their essential character. The principles and methods he had successfully proved in more restricted fields were adapted to wider issues. He was, in truth, the great Elizabethan of our age.

Annotations.

"Ne quid nimis."

BOVINE TUBERCULOSIS.

THE Board of Agriculture and Fisheries has issued an amended Tuberculosis Order relating to the compulsory slaughter, with compensation, of bovine animals affected with certain degrees of tuberculosis. The new Order, which comes into operation at once, simplifies the basis of the compensation to be paid, which is now to be the estimated market value of the animal, while a circular which accompanies the Order states that the Treasury contribution to the expense of the local authorities concerned will in future be on the basis of three-fourths of the compensation money instead of one-half, as previously authorised. The animals which are subject to notification and compulsory slaughter are those with emaciation due to tuberculosis, those with a chronic cough and showing definite clinical signs of tuberculosis, and cows with tuberculosis of the udder or giving tuberculous milk. As in the case of the 1913 Order, the notification of any one of these forms of tuberculosis entails a visit by the veterinary inspector of the local authority under the Diseases of Animals Act, who is required to extend his examination to other bovine animals on the premises. It does not appear, however, that this further examination is to be made with the object of applying the tuberculin test to detect early tuberculosis, or of advising or

assisting the farmer to separate the reacting animals from the rest of the stock, and so ultimately to obtain a herd free from the disease; the Order and circular endeavour to limit the inspector's activities as much as possible to the detection of the advanced cases for which compensation is payable. There is thus some risk that the ease with which the animals with advanced tuberculosis can be disposed of, and substantial compensation obtained, will reconcile the cow-keeper to allowing tuberculosis to spread in the dairy herd without taking measures to detect and separate cases of incipient tuberculosis or to rearrange his cowsheds so as to minimise cow-to-cow infection. Among other matters which are left in a somewhat uncertain state by the Order, we note that the local authority is directed to dispose of the carcass of the animal to the best advantage, and in cases where the carcass or a portion thereof is likely to be saleable for human consumption to obtain the removal of the animal to a slaughter-house for the purposes of slaughter. It is advised that the local authority for the purposes of the Order, which is not necessarily the sanitary authority, should confer with the latter body so that steps may be taken to guard against the use in such cases of diseased meat for human food; but it is not clear how this dual responsibility can be effectively discharged in the case of private slaughter-houses in the country, and many difficulties seem likely to arise unless a more definite instruction is given. The Order, like its predecessor, will be welcome from the side of public health to the extent that it aids in the early removal of cows giving tuberculous milk from the milk-supply, and is not merely used to get rid of the "piner" or "waster" when its value for milking has almost ceased. At present its administration by local authorities seems to be practically independent of the information obtained by public health authorities as a result of their examination of milk for tubercle bacilli, but it is to be hoped that the Milk and Dairies Bills for England and Scotland will soon be enacted and enable the necessary adjustments to be made and secure that the large sums to be paid from national funds are expended with satisfactory results to the consumer of milk as well as to the cow owner.

THE PRESCRIBING OF NARCOTIC DRUGS.

IN connexion with the International Opium Convention events are so shaping themselves that it will be necessary before long for all the Powers concerned to complete their plans for the passing of domestic legislation to give effect to the provisions of the Convention. For some time our own Foreign Office and other departments have had the matter under consideration, and with the object of obtaining expert opinion on various points have consulted representative medical and pharmaceutical bodies. The Government will be bound by the provisions of the Convention to enact such regulations as will prevent, as far as possible, the illicit distribution of opium, morphine, cocaine, and other drugs having similar properties; but there appears to be nothing in the articles of the Convention to compel the Government to amend the law as to the sale of poisons in such a way as to alter existing practices in connexion with the prescribing and dispensing of the narcotic drugs in question. Nevertheless, it may be found expedient, in order to enforce the spirit of the Convention, to do things which its actual terms do not require to be done; and it is evident from the nature of the inquiries that the authorities are causing to be made that the question of placing some sort of limitation on the currency of prescriptions for narcotic drugs is being seriously considered. Thus the Under Secretary for Foreign Affairs has asked the opinion of the Council of the British Medical Association on the suggestion to lay down that a medical practitioner should state in his prescription the number of times it may be dispensed and to require pharmacists to comply with this limitation under penalty. The Under Secretary has been informed that the Association has long recognised the dangers arising from the ease with which persons in this country can obtain powerful drugs by means of a medical man's prescription, and that it is of opinion that legislation should be introduced to provide for the limitation of such prescriptions in the manner suggested. This is sound advice, and the only difficulty that can be foreseen is that practitioners might occasionally forget to write the necessary instructions on their prescriptions, which could then be dispensed an unlimited number of times, as at present. This difficulty, it may be suggested, could be overcome by framing the regulations so as to require that prescriptions for narcotic drugs must only be dispensed once unless the contrary is stated in writing. The principle of the limitation of the currency of prescriptions is wholly commendable, and if it can be enforced without inconvenience in other countries there appears to be no reason why it could not be adopted in the United Kingdom.

SUBCUTANEOUS INJECTIONS OF AIR IN FIBROSITIS AND ALLIED AFFECTIONS.

IN the *New Zealand Medical Journal* for March is published a paper, read at the recent Australasian Medical Congress in Auckland, on the subcutaneous injection of air in fibrositis and allied affections by Dr. A. Douglas. The method is of French origin and appears first to have been employed by Cordier in the treatment of neuralgia and sciatica. He stated that in 25 cases of the latter he had only two failures. Dr. Douglas finds that the method, which he has used some hundreds of times, is simple and safe, and gives prompt relief. A hollow needle, which for convenience should be larger than an ordinary hypodermic needle, is used. A platino-iridium exploring needle is very suitable and can be quickly sterilised in a flame. A bulb and tube, such as are used for a throat spray, are attached to the needle. A wisp of wool was originally inserted into the tube, where it was attached to the needle in order to filter the air, but experience has proved this precaution to be unnecessary, as infection never occurs. After sterilising the needle the skin and fat are picked up and the needle is thrust well into the cellular tissue, as in giving a subcutaneous injection. The needle is then withdrawn a little so as to avoid the least risk of inflating a blood-vessel, and air is pumped into the cellular tissue. An emphysematous swelling is produced and the air can be seen to course through channels under the skin, which vary greatly with the individual and site. As the air is slowly pumped in the left hand manipulates and distributes it throughout the affected area. The amount of air used must be judged by experience. In the lumbar region the swelling should be as large as that produced by a pint of saline solution. It is desirable that

a tympanitic note over the whole of the affected part be obtainable, and in the case of a big hip or thigh a considerable quantity of air is necessary. After withdrawing the needle it is good practice to massage vigorously for a few minutes so as to distribute the air thoroughly, moving it backwards and forwards through the tissues. It is sometimes necessary to introduce the needle in more than one place on account of deep attachments of the fascia limiting the injected air. Such boundaries are well marked in the middle of the back. Little pain beyond that of introducing the needle is produced, and the patient almost invariably experiences immediate relief and moves with much greater freedom. The air remains for several days and is gradually absorbed. Dr. Douglas finds that sciatica is less amenable to the treatment than is lumbago. He thinks this may be due to the fact that in a large proportion of cases of sciatica there is arthritis of the hip-joint. The explanation of the mode of action is not obvious. Dr. Douglas suggests that the air stretches the nerve terminations in the cellular tissue and acts somewhat like nerve stretching in sciatica. The following are two examples. A man, aged 30 years, subject to lumbago, had an attack in which he could not move. Air was injected, and in a few minutes he could stand and pick up articles from the floor. A man, aged 32 years, was subject to sciatica, which sometimes continued for months. He had undergone various treatments, including high-frequency currents and electric baths. For the last few years he always returned for the air treatment, which was the most effectual.

HELIOTHERAPY IN SURGICAL TUBERCULOSIS.

THOUGH the value of heliotherapy in surgical tuberculosis was pointed out many years ago by the French surgeons, Bonnet, Ollier, and Poncet, it has become a recognised method on the Continent only in recent years. In this country a beginning has scarcely been made. In the special tuberculosis number of the *Interstate Medical Journal* Dr. G. Hinsdale has described the treatment on the French coast and in the Swiss Alps. As far back as 1857 Madame Duhamel, who cared for scrofulous children at Berck-sur-Mer, had them wheeled twice a day to the beach, and after bathing them and washing their sores she refused to clothe them completely, evidently with the idea that the unobstructed exposure to sun and air would hasten their recovery. Now at this great French resort for the tuberculous free access of sunlight is deemed the essential feature of the treatment. The long galleries or balconies at the Marine Hospital are constructed for the purpose of completely exposing the body to sunlight. Here in summer the patients unclothed spend the whole time from 6 A.M. to 5 or 6 P.M. Operation wounds are exposed from the fifteenth day, but operations are exceptional and performed only as a last resort. In Switzerland the greatest impulse to heliotherapy has been given by Rollier, whose remarkable results at Leysin have attracted much attention. He carries heliotherapy a stage further than his predecessors, who exposed only diseased parts to the sun. He exposes the whole body. This he accomplishes gradually. According to the gravity of the case he allows from three to ten days after arrival in the mountains to elapse before beginning exposure. No matter what the seat of the disease—hip, spine, or cervical glands—he begins by exposing the feet to the sun for five minutes at intervals of an hour five times on the first day; on the second day similar exposures of the legs are given; on the third day the thighs are also exposed; on the fourth day the abdomen; and on the fifth day the chest, when the precaution is taken of covering the heart with a damp cloth. If the condition of the patient permits the back is also exposed to the sun. Finally, on the sixth or seventh day the head and neck are exposed. As the skin becomes pigmented the duration of the exposure is increased. Hand in hand with the pigmentation the tuberculosis is cured. Rollier has succeeded in training his patients, both children and adults, so that they live almost nude in the open air of the Alps quite comfortably. Sunlight has considerably more actinic power in the mountains than at the sea level, but heliotherapy can be successfully practised at the latter.

PLAGUE CLOUDS IN THE WEST.

AT the present time plague clouds are appearing on the horizon and threatening to approach the United States. Although some of these clouds may as yet seem small and at a considerable distance away, they cannot be altogether disregarded. We have already on many occasions called attention in these columns to the danger arising from the protracted and extensive epizootic of plague among the hordes of ground squirrels which inhabit a large part of the State of California. American as well as other epidemiologists have long recognised the risks of a human epidemic originating at any time by extension of infection from ground squirrels to local rats, which often share the same burrows, and from rats through the agency of fleas to man. From time to time sporadic human cases of plague are reported in the affected districts of California, and these instances are invariably associated with infected ground squirrels; the last reported case of the kind occurred this year in May, and was fully confirmed by bacteriological examination. To the north of California, and separated from it by Oregon, is the State of Washington, abutting on the Pacific. On the coast of this State is the rising port of Seattle, on Puget Sound, not very far from the Canadian frontier, having important connexions with the interior by means of the Northern Pacific and other railways, and having also a considerable coasting as well as trans-Pacific trade. At the end of last year plague-infected rats were discovered along the water front of this city, and notwithstanding the strenuous local efforts to suppress the epizootic, other infected rodents have been found since then, week by week, up to the present time. Only one suspected fatal case in man has so far occurred, but so long as the rat population of Seattle remains infected so long will there be danger of the disease extending to man. A few days ago information reached us that on June 28th two persons in New Orleans had been attacked by plague; since then three more attacks have occurred with two deaths. Whether the two first cases were imported or were due to existing infection smouldering unrecognised in that city it is not possible as yet to say. Unless the sanitary condition of New Orleans has been greatly improved since 1912[1] it is hardly in a satisfactory state to resist the invasion of plague. The disease has also been occurring, in a dropping fire of

[1] See THE LANCET, August 10th, 1912, p. 394.

cases, in the West Indian island of Cuba, which is under the protection of the United States, and with which it carries on a considerable commerce. Up to the middle of June, the date of the last reports, some 22 cases had been notified in Havana, the capital of Cuba and its chief seaport; the infection had been carried thence to the town of Artemisa, 35 miles south-west of Havana, and recently an epizootic of plague in rats had been discovered in the town of Jaruco, situated 26 miles south-east of the capital. It is possible that the two first cases in New Orleans may have been associated with the plague infection now existing in Cuba, as there is much trade between these ports. Lastly, it may be mentioned, in view of the increasing connexions now being established between the United States and the Isthmus of Panama, that plague, said to be of the pneumonic type, has been for some time and is still manifesting itself in Colombia, of which State the Panama Canal zone at one time formed part before its transfer to the United States. The correctness of the diagnosis of plague in the Colombia cases has been denied, but it has to be remembered that many of the South American Republics make a practice of denying point blank the existence of plague and yellow fever within their borders in order to escape the inconveniences of quarantine. On the other hand, from a trustworthy source comes the definite statement that the diagnosis of plague has been confirmed by bacteriological examination both of the sputum and the blood of several patients. It is also asserted that "cases of pneumonia of an infectious kind," nearly all of them fatal, have been occurring along the Colombian coast of the Caribbean Sea for more than a year, their true character and their relationship to plague not having been recognised until now. In the face of these facts it can scarcely be disputed that there are plague clouds threatening the United States, and it would appear that this has been officially recognised. Several articles on plague have lately been published in our American contemporary, *Public Health Reports*, the official organ of the United States Public Health Service, and in one of them the danger arising from the infected ground squirrels in California and the plague-stricken rats at Seattle is freely admitted, as also the advisability of giving exact information concerning the disease as far as practicable to all persons who may at very short notice be called upon to take their part in a comprehensive anti-plague campaign. For this purpose one of the articles, under the title of "Fleas and Plague," gives an account of the important series of experiments carried out by Bacot and Martin, of the Lister Institute, under the direction of the Commission for the Investigation of Plague in India, the results of which have added so materially to our knowledge of the mechanism of the transmission of plague by the rat-flea, and to which we have already directed attention in our issue of April 4th, 1914, p. 975. Another of the articles in *Public Health Reports* deals with some of the difficulties met with in the diagnosis of plague, mention being specially made of cases in which plague has been mistaken for filariasis; and an instance is quoted where a patient really suffering from filarial lymphangitis was thought to have genuine bubonic plague. The attention of practitioners in regions such as the West Indies, where filariasis occurs, was specially called to these cases. The Public Health Service of the United States has in its ranks a large number of highly trained and competent medical officers many of whom possess special experience of plague gained in various parts of the world. The services of these experts would at once be available in the event of the disease showing any tendency to extend beyond its present limits. Against this, however, is the assertion, made by those who apparently know, that some of the towns and districts likely to be invaded, if the infection spreads, are hardly in a satisfactory sanitary condition such as would enable them to repel successfully the insidious onset of plague. Perhaps the present season of the year is not altogether favourable for the immediate spread of plague in North America, but there is always the risk that the infection may gain a footing in one or more places where, under favouring conditions, later on it may break out with renewed virulence and spread to more populous districts in the interior.

THE PARALLELISM OF CAUSES OF DEATH.

THE comparative constancy of the death-rate from various diseases is suggested in a remarkable manner by a table issued by the New York Life Insurance Company. This table gives the causes of death of 8549 of the company's insured who died during the year 1912. We have received from the company a similar statement for the year 1913, and it is the close parallelism in the ratio of deaths from particular causes to the total death-rate that is of interest. We quote the figures in parallel columns:—

Causes of Death among 8549 Insured People who Died during 1912 and 8793 who Died during 1913.

	1912.	1913.
Heart disease	1060	967
Consumption	905	967
Bright's disease	870	931
Pneumonia	700	673
Cancers and tumours	631	660
Apoplexy	603	641
Accidents	458	488
Diseases of digestive organs	309	289
Diseases of arteries	305	271
Paralysis	283	286
Liver disease	222	194
Bronchitis, pleurisy, &c.	179	209
Diabetes	176	158
Typhoid fever	154	140
Blood poisoning, anæmia, &c.	144	148
Spinal disease	131	107
Appendicitis	116	117
Old age	64	63
Nervous prostration, congestion of brain, &c.	40	29
Rheumatism	34	36
All other causes	1165	1419
Total	8549	8793

The extra 244 deaths in 1913 are all accounted for in the last item, all other causes, which exceeds in 1913 by 254 the number under that heading in 1912. Some of the correspondences are very remarkable—e.g., rheumatism 34 and 36, appendicitis 116 and 117, blood conditions 144 and 148, paralysis 283 and 286. But throughout the table the parallelism is remarkable, and it is particularly worthy of notice that old age accounts for only 64 and 63 deaths respectively in the two years. Among the specific infectious diseases it is noteworthy that only consumption, which is second on the list, with ratios of 11·7 and 10·9, and typhoid fever, with ratios of 1·8 and 1·59, are especially classified, from which it

is fair to conclude that none of the others have a ratio sufficiently large to justify their removal from the class of all other causes. The same remark applies to the venereal diseases. These causes of death, of course, are the immediate causes; it is only natural to suppose that rheumatism and perhaps other fevers and syphilis were remotely responsible for some of the large number of deaths from heart disease and some other conditions.

THE CLINICAL AND SEROLOGICAL EXAMINATION OF SYPHILITIC FAMILIES.

THE latest number of the *Deutsche Zeitschrift für Nervenheilkunde* is a *Festschrift* contributed by former and present assistants in honour of the jubilee of the well-known General Hospital of Hamburg-Eppendorf, and edited by Professor Dr. Nonne, in whose division of the hospital these assistants have worked. It contains a variety of papers of considerable neurological interest, of which a number, as might be expected from the fact of Dr. Nonne's superintendence, deal with syphilitic disease of the nervous system. Dr. Nonne himself contributes an article on the significance of examination of the cerebro-spinal fluid for the prognosis of cases where the only clinical symptom is an affection of the pupil. There is a paper on the earliest diagnosis of syphilitic invasion of the central nervous system, by Dr. Hauptmann, and another on syphilis as an antecedent in dementia præcox, by Dr. Meggendorfer. Attention may be drawn in detail to a contribution by Dr. Wilhelm Raven, on the serological and clinical investigation of syphilitic families. No fewer than 117 families have been examined, of each of whom at least one member was at one or other time an inmate of the hospital. In as many of the parents and children as could be reached a complete routine serological investigation and clinical examination were made. Not more than 27 members of these 117 families were completely normal; expressed in other words, only in 23 per cent. of the families subjected to examination was the syphilitic infection found to have been strictly confined to the individual first infected. In 77 per cent. it had been communicated to others of the family. To take the condition in the parents first: in 65 families where only one parent originally suffered from syphilis, 64 of the parents originally infected (father or mother) showed syphilitic disease or gave a positive Wassermann reaction in the blood. Of the parents not originally infected (mother or father as the case might be) 30, or 46 per cent., suffered from syphilitic nervous disease, 16, or 24 per cent., had a positive Wassermann reaction in the blood, while only 19, or 29 per cent., were normal. The condition of the children was investigated in 82 families; 8 out of 90 families were sterile. In these 82 families the results of 350 pregnancies were obtained. 47·7 per cent. ended in miscarriages or premature births and deaths in infancy; 52·3 per cent. children lived; of these, only 16·5 per cent. were fully normal, while 35·8 per cent. were pathological. Dr. Raven has obtained evidence to show that the more severe the syphilitic infection of the parents the less severe is the form it will take in the children; and *vice versâ*, where one parent (mostly the mother) has remained healthy, there the largest percentage of diseased children has been met with. These data do not agree with the findings of Hochsinger and others. They may be taken to suggest that the virulence of the syphilitic virus diminishes with its passage through the parents; the more intensive that passage, the less potent the effect of the virus on the descendants. Another interesting set of statistics concerns the matter of the bearing of paternal as opposed to maternal infection on the health of the progeny. This question was investigated in 72 families. In 52 the father was originally infected, and 154 pregnancies were recorded in the group; 17·5 per cent. were healthy children, 34·4 per cent. had signs (somatic or serological) of syphilis, 23·3 per cent. were stillbirths or died in infancy, and 24·6 per cent. were miscarriages. On the other hand, in the remaining 20 families the mother was originally infected; 74 pregnancies were in this group, of which only 5·4 per cent. resulted in healthy children, 20·2 per cent. were pathological, 32·4 per cent. died in infancy or were deadborn, while 41·8 per cent. were abortions. Thus about one-half of the children of the diseased fathers lived, but only about one-quarter of the mothers'; about one-third of the fathers' children that lived were healthy, but only about one-fifth of the mothers'. Speaking generally, the first, second, and third children of the infected families were more severely hit by the inherited disease than any others that might follow. However, not a few exceptions to this generalisation were noted. A healthy child, as Fournier said, is no guarantee for the health of the next arrival. Of a totality of 119 children of infected families, 10 per cent. suffered from organic nervous disease or were mentally abnormal; 37 per cent. showed various stigmata of degeneracy, and an additional 10 per cent. with stigmata had also a positive Wassermann reaction in the blood; 11 per cent. had a positive Wassermann reaction only, while 30 per cent. were normally healthy. Up to about the sixteenth year after parental infection congenitally diseased children may appear; thereafter any children born of the marriage are less likely to reveal any somatic or serological defect. The figures given by Dr. Raven are of value and deserve careful consideration. The conclusions are that persons who suffer from syphilitic nervous disease—spirochæta carriers—are actively infective; that syphilis is no less dangerous during a so-called latent period; that the presence of a positive Wassermann reaction in the blood can never be other than a serious indication of disease and of the necessity for treatment; otherwise syphilis will continue to descend upon the children to generation after generation.

THE Home Secretary, acting upon the recommendation of the Prison Commissioners, has appointed Miss Selina Fox, M.D., at present superintendent of the Bermondsey Medical Mission, to be Lady Superintendent and Deputy Medical Officer of the institutions for women at Aylesbury, comprising the female convict prison, the Borstal Institution for Females, the State Inebriate Reformatory for Women, and the Preventive Detention Prison for Women.

DEATH OF A VETERAN PRACTITIONER.—Mr. Henry Richard Foquett, M.R.C.S. Eng., L.S.A., of Portland-street, Ilfracombe, died on June 24th, from the result of a cycle accident, in his eighty-fifth year. Mr. Foquett, who qualified in 1852, practised in Ilfracombe for about 50 years, but retired from active work some years ago.

THE BOUND FEET OF THE CHINESE WOMAN.

THE accompanying skiagrams were taken in Shanghai, and have been sent to us by the operator on the recommendation of Dr. F. M. Neild. We publish them with pleasure, as it is not at all easy to get a Chinese woman to submit to photographic processes, while the skiagrams well reveal the distortion caused by bandaging the feet.

The practice of binding the feet of Chinese women is still very prevalent among the better classes, in spite of all that is being done by the "Anti-footbinding Association." The spread of foreign ideas and familiarity with medical science have had some effect, but the barbarous custom still holds its own. The origin of the custom is put down by some people to the desire to emulate a certain club-footed Empress of China, and by others simply as a device of the Chinese men to prevent their women-folk from running away from home. Either motive is so consonant with Chinese ideas that it is quite likely that both have had their influence.

The feet are bound at the age of five or six years with strips of strong cotton material, eight or nine yards in length and about four inches wide. The bandages, once on, are not removed for some years.

FIG. 1.

Reproduction of photograph of Chinese woman's bandaged foot from the front.

Frequently the child suffers terribly, especially at night, when the feet swell with the warmth induced by sleep. Medical information on any sequelæ that may follow the treatment is not at all voluminous. That gangrene may be induced in a certain number of instances is obvious.

Women on becoming Christians usually unbind their feet, and they have stated that this process is more painful than that of binding. The lady to whom we owe the chance of publishing the skiagrams of a bound foot sends the following communication with them:—

A Chinese woman of high rank lately went to an English medical practitioner in Shanghai, saying that she had heard that small feet were no longer fashionable, so she wished her feet to be made into their proper shape again. It was impossible to convince her that it could not be done. The process of unbinding has to be done very gradually, and signs of mortification are not unknown.

The pictures tell their own story, showing clearly how some bones have been compressed by bandaging, while others appear abnormally enlarged owing to their want of adaptation in their artificial positions. The owners of small feet are extremely reticent about them, and it is considered to be the height of immodesty to let a stranger see a bare unbound foot. The woman to whom the foot here shown belonged was an *amah* or children's nurse in an English family, and somewhat inured to European ideas, but she required a great deal of persuasion before she allowed the picture to be taken, and was afterwards looked upon with horror by her friends as a woman who had disgraced herself by her action.

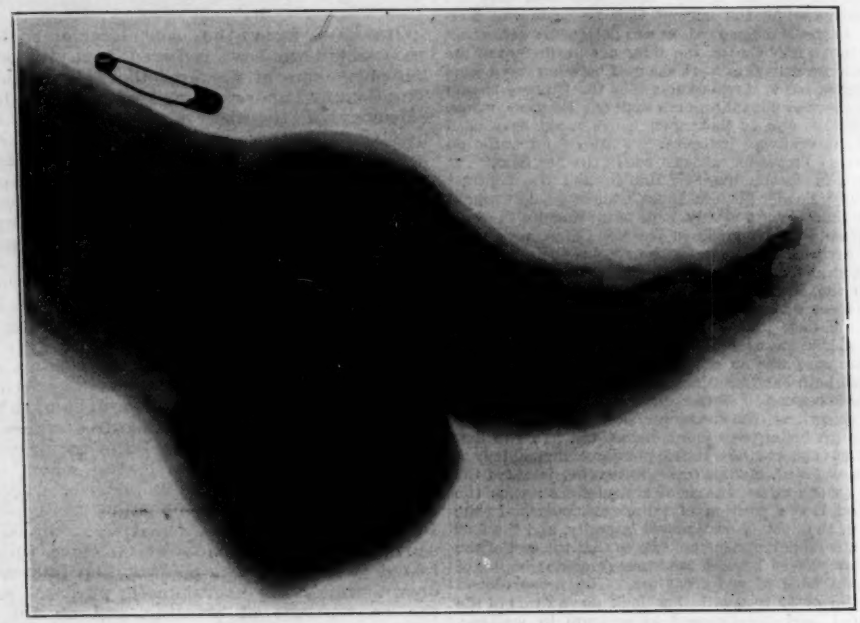
Mr. Muirhead Little, to whom we submitted these illustrations, writes:—

Since the discovery of the Roentgen rays a certain number of radiographs of Chinese women's feet have been taken, and I had one in my possession for some years, but none of them, I believe, have been representative of the highest degree of distortion. As a really small bound foot renders its owner almost incapable of locomotion, it follows that only the well-to-do can afford this doubtful luxury, and as a fact it is only in the wealthiest and most distinguished families that such feet are found. As your correspondent suggests, such ladies will not allow their feet to be examined, still less photographed, and all the radiographs have been taken from women of the working-class whose feet are only moderately deformed, allowing them still to carry out the duties of domestic service.

Until recently, when the Anti-footbinding Association has made great progress, a Chinese woman with natural feet was considered disreputable, and the normal foot was associated with all that is vile. Sensible Chinese parents recognised the evils of the custom, which they dare not depart from for fear of the social ostracism of their daughters. Mr. Archibald Little[1] wrote some 30 years ago: "Mine host appeared with his little daughter ..... She was a little *chétive* thing of 10 years, but from her size looking much younger, and so pale that I asked her father whether there was anything the matter with her. He said, 'No, but she was suffering from her feet.' ..... Hers were bandaged up until they looked more like those of a doll than the feet of a human being, and the poor child never attempted to walk without holding on to someone's hand, and was always carried up and down the flights of steps which led from one courtyard to the other. My host, like other Chinamen with whom I have conversed on the subject, agreed that it was a pity for the children that such a custom existed. .....With the exception of the boatwomen in the south (the Han-shui-mei), and the aboriginal tribes in the west, as also perhaps a few beggars and outcasts, all the women of China, poor as well as rich, are crippled in this barbarous fashion." At the same time it must be remembered that the women of the Imperial family of China, and those of the Manchu nobility

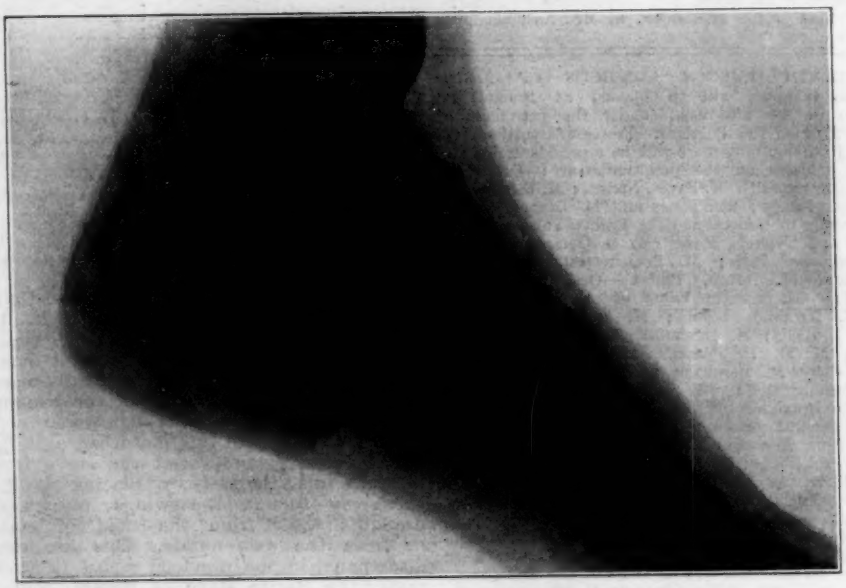
[1] Through the Yangtse Gorges, second edition, London, 1888.

FIG. 2.



Chinese woman's bandaged foot in profile. The subject was resting on her back with her foot protruded in front of her.

FIG. 3.



Foot of an English woman, showing proper position and relation of bones to each other.

who are allied to them by race, have never bound their feet. When in 1644 the Manchu Tartars conquered China they imposed the Tartar pigtail on the Chinese, but although they obliged the subject race to copy their head-dress they did not themselves adopt the ancient Chinese custom of foot-binding. As the Manchu garrison was designedly kept apart and made into a noble caste, the difference in the feet of the women no doubt helped to mark the gulf between conquerors and conquered, but it is remarkable that the Chinese should have been devotedly loyal to more than one Empress, whose unbound feet in one of their own ladies would have been horribly disgraceful and indecent. Flattery and imitation do not always go together, at least not in the Far East.

The effect of footbinding on health, and the contrast between the "slender listless appearance of young Chinese girls" and the "robust sturdy look of a Manchu family" whose acquaintance he made in Western China, very much struck Mr. Archibald Little before he noticed their feet, and he was at first at a loss to account for it.

Although the Manchu women's feet are not bound, they often wear shoes with very high heels placed right under the middle of the foot. These seriously hinder walking, and I am informed by an eye-witness that the late notorious Dowager Empress was so crippled by her shoes that she always rested both hands on the shoulders of her attendants when she had occasion to move about the audience hall.

As the skiagrams show, compression of the feet is obtained by producing two main distortions. In the first place, the foot is shortened by acute plantar flexion, chiefly at the transverse tarsal, but also at all the other joints of the tarsus and at the tarso-metatarsal articulations; thus the foot is forced into a position of talipes calcaneus. In the second place, the foot is compressed laterally, and the four outer toes are folded under the sole so that the end of the little toe may project beyond the inner (median) border of the metatarsal bone of the great toe. The proper dorsal surface of the outer toes will thus look downwards in the erect position and be exposed to pressure in walking. Obviously this must be a source of pain and cause of disability.

The reference to gangrene reminds me of an incident related by Dr. Kerr, for many years a medical missionary at Canton. A Chinese lady consulted him about her feet "Both ..... had mortified off through binding; she had, however, brought them with her—*in spirits*—and now wanted the foreign doctor who could do such wonders to fasten them on for her again."[2]

[2] In the Land of the Blue Gown, by Mrs. Archibald Little, London, 1912.

FOURTEENTH FRENCH CONGRESS OF MEDICINE.—This Congress will be opened at Brussels on Sept. 30th in the afternoon, under the patronage of H.M. the King of the Belgians. Professor Henrijean will preside. In the evening there will be a presidential reception. The subjects on the programme are:—Oct. 1st: Cardiovascular Syphilis (M. Bayet, Nantes; M. Etienne and M. Spillman, Nancy; M. Vaquez and M. Laubry, Paris); Vaccinotherapy in General and the Special Vaccinotherapy of Cancer and Typhoid Fever (M. O. Gengou, Brussels; M. Chantemesse, Paris; M. Bruschettini, Genoa; M. Vincent and M. Doyen, Paris). Oct. 2nd, general session: The Therapeutic Value of Artificial Pneumothorax (M. Burnand, Leysin; M. Derscheidt and M. Geeraerd, Brussels; M. Dumarest, Hauteville; M. Kuss, Angicourt; M. M. L. Rénon, Paris). Sectional communications by M. Bernheim and M. Jaworsky, Paris. In the evening there will be a rout at the Hôtel de Ville de Bruxelles by the Communal Administration. Oct. 3rd, general session: The Lipoids in Pathology (M. Edg. Zunz, Brussels; M. Chauffard, M. Guy Laroche, and M. Grigaut, Paris; M. Linassier, Vichy; M. J. Bordet, Brussels; M. N. Waterman, Rotterdam). In the afternoon various communications will be offered. On Sunday, Oct. 4th, there will be an excursion to Spa. The subscription for attendance at the Congress by medical non-members is 20 francs, for students 10 francs. The usual reduction of 50 per cent. will be made on the French railways. The treasurer of the Congress, to whom subscriptions should be sent, is Dr. Godart Danhieux, 9A, Rue Montoyer, Brussels, and the general secretary is Professor René Verhoogen, 22, Rue Joseph II., Brussels.

"THE LANCET" HYGIENIC TEST FOR GAS FIRES.

JUDGING from the considerable correspondence which we have received from various well-known makers of gas fires, the test originated in THE LANCET Laboratory for arriving at the hygienic efficiency of these fires and described for the first time in these pages on Feb. 7th, 1914, has met with general approval and wide acceptance. In a report subsequently published in THE LANCET of April 4th, 1914, the results of the examination by this test of a number of gas fires then upon the market were presented. The list of gas fires examined was a very representative one, but we stated at the time that any omissions would be repaired in a subsequent article if the makers would submit any new designs claimed to be an advance on existing types.

This invitation was accepted, and within a week of the publication of the report Messrs. John Wright and Co., of Essex Works, Aston, Birmingham, submitted to us 12 of their 1913 pattern stoves, which, as the following results show, passed the requirements of THE LANCET test perfectly, even when no flue length was attached to the flue nozzle. There was no forward escape of combustion products at all. In the following table the straight lines represent the rim of the canopy of the stove, which was tested at five different points. The lines are only drawn straight for diagrammatic purposes and for the convenience of printing, and do not necessarily represent the shape of the canopy, which may have a straight or curved rim, as the case may be. Where the sign "o" occurs it signifies no leakage; in the event of leakage the sign + is used.

"THE LANCET" TEST OF GAS FIRES (John Wright and Co.).

Name of fire	*Standard.*	*Swastika.*	*Forum.*	*Druid.*
Without elbow ...	o o o o o	o o o o o	o o o o o	o o o o o
2-ft. elbow attached	o o o o o	o o o o o	o o o o o	o o o o o

Name of fire	*Herald.*	*Sorcerer.*	*Merlin.*	*Talisman.*
Without elbow ...	o o o o o	o o o o o	o o o o o	o o o o o
2-ft. elbow attached	o o o o o	o o o o o	o o o o o	o o o o o

Name of fire	*Warlock.*	*Stadium.*	*Mascot.*	*Wizard.*
Without elbow ...	o o o o o	o o o o o	o o o o o	o o o o o
2-ft. flue attached ...	o o o o o	o o o o o	o o o o o	o o o o o

Further experience of the test shows that certain precautions are necessary in applying it. It proves to be very delicate, and a gas fire which gives absolutely negative results with it has passed through a severe ordeal. Occasionally a leakage is shown at the extreme ends of the canopy, which often proves to be due to a slight external draught. In order to obviate this disturbance it has been found necessary to protect the stove from such outward disturbances by placing it within a three-way screen, the wings of which keep draughts away from the field of combustion or from the exit nozzle. This accounts for a discrepancy in the previous report, in which apparently the Merlin stove of Messrs. John Wright showed a slightly increased leakage after a 4-ft. length of flue had been attached, whereas with a 2-ft. flue, which should render less assistance

to the ventilation of the combustion products, the results seemed to be better. In either case, however, the leakage was so small as to be hygienically negligible, and the fact that it was only occasional pointed to an external disturbing factor. During the test, therefore, the fire should be protected from draughts. In the test, it may be remembered, an absorbent pencil, made, for example, of chalk, is soaked in carbon tetrachloride and placed near the air inlet of the gas fire. Traces of carbon tetrachloride are thus drawn into the burners, with the result that on combustion hydrochloric acid is produced, which, although present in small proportion, is readily detected by coming into contact with ammonia, forming dense fumes of ammonium chloride. If, therefore, the products of combustion are "by-passing," this will instantly be shown by fumes being produced when an open tube containing strong ammonia solution, or a sponge soaked in the solution, is placed at various points along the rim of the canopy.

We have also received from Messrs. Arden, Hill, and Co., of Acme Works, Birmingham, four gas fires for test. The results are given in the following diagram. They show, again, that these fires are so constructed as to permit of no escape of combustion products at all except by way of the flue nozzle, and the attachment of a 2-ft. length of flue was not necessary in any case.

"THE LANCET" TEST OF GAS FIRES (Arden, Hill, and Co.).

Name of fire	*Gnome.*	*Loka.*	*Olak.*	*Kalo.*
Without elbow ...	00000	00000	00000	00000
2-ft. length attached	00000	00000	00000	00000

These results justify our expressed conclusion that "the present attitude of the gas fire industry towards all questions of improvement is a most satisfactory one, and our inquiry shows that we may fairly expect in the near future an encouraging and hopeful issue." Progress in the direction indicated will mean that no reproach based on hygienic considerations against the radiant system of gas heating can remain. We are still conducting tests with fires received from other makers, and we shall publish the results from time to time as the experiments are completed.

ST. MARY'S HOSPITAL. — The annual old students' dinner in October next will be presided over by Sir Almroth Wright.

THE PARLIAMENTARY COMMITTEE ON FOOD AND HEALTH AND THE MILK AND DAIRIES BILLS.—At a meeting of the Parliamentary Committee on Food and Health, held at the House of Commons and presided over by Mr. Charles Bathurst, M.P., the following resolution was moved by the chairman, seconded by Sir W. Phipson Beale, M.P., and carried unanimously:—

The Parliamentary Committee on Food and Health cordially supports the Milk and Dairies Bill and Milk and Dairies (Scotland) Bill as measures designed to secure to the community an unrestricted supply of pure milk with the minimum amount of interference with the producer. While recognising them to be capable of improvement in some details, it earnestly deprecates the insistence on drastic amendments as calculated gravely to imperil the passage of Bills long overdue and of vital importance to the health of the people and especially of the children. The committee trusts, however, that a clause sanctioning the sale of "certified milk," which in the United States has played so conspicuous a part in raising the milk standard and in forming public opinion in favour of clean milk, will, by general consent and in the interests alike of producers and consumers, be included in both measures.

Additional copies may be obtained by forwarding a stamped addressed envelope to the secretary, 178, St. Stephen's House, Westminster, S.W.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).

A FINAL meeting of the organising committee was held at 11, Chandos-street, Cavendish-square, W., in the rooms of the Medical Society of London, on Tuesday, July 7th. The President and 19 other members were present. The minutes of the last meeting were read and confirmed. Letters of regret for absence from several members were read. The following report of the finance committee was received, adopted, and ordered for entry on the minutes.

Report of the Finance Committee.

A subscription list towards the general expenses of the Congress was opened on Nov. 20th, 1910, and this list continued open until the date of the meeting in August, 1913.

Subscriptions thereto were received from 1613 individual members of the profession. Contributions were also generously made by the Royal College of Physicians of London, the Society of Apothecaries of London, the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, the Proprietors of THE LANCET, the Worshipful Companies of Merchant Taylors, Goldsmiths, Clothworkers, and Salters, also by Lady MacCormac, and Lady Butlin.

The total sum of £5418 5*s.* 7*d.* received from these sources was further augmented by £2834 4*s.* 4*d.*, the profit derived from the Congress Exhibition, and a sum of £195 3*s.* 11*d.* accruing from various sources, such as the sale of materials temporarily employed in the organisation of the central office and museum, and the interest on money placed upon deposit with the bankers.

To the above sums remains to be added £6494 11*s.* 9*d.* received in membership fees. Thus in all a grand total of £14,942 5*s.* 7*d.* was obtained.

An estimate of probable receipts and expenditure submitted by the honorary treasurers to the finance committee at an early date proved practically accurate as far as the expenses of organisation and the various sources of income are concerned. With regard, however, to the matter of entertainment, it should be noted that the reception committee undertook only a single evening conversazione, and that as on previous occasions the executive committee was largely indebted to the generosity of private individuals and public bodies for the highly successful social gatherings which took place. Mention of the various public bodies who gave invaluable help, both in affording accommodation for the meetings of the sections and in the exercise of hospitality, has already been made in the preface to the general volume of the Transactions. The estimate assumed further that, as on previous occasions, the sum received by payment of fees by members would suffice to meet the expenses of printing, publishing, and distributing the volumes of the Transactions of the Congress. When, however, the great mass of material afforded by the original papers and the discussions thereon came into the hands of the editors, a provisional estimate was asked for from the publishers as to the cost of printing and distribution. From that estimate, as submitted to the finance committee, it appeared obvious that the balance lying to the credit of the honorary treasurers would prove insufficient for the purpose for which it had been reserved. This insufficiency depended not only on the great mass of material to be printed, but also on the heavy cost to be entailed by the distribution of the volumes to members, so large a proportion of whom reside either on the continent, in America, or in the dominions beyond the seas.

The finance committee therefore decided to make an appeal to the officers of each section and subsection, and thus endeavour to raise from each an additional sum proportionate to the size of the section or subsection concerned, and to the expense incurred in printing and distributing its volume of the Transactions. The ready help afforded by all the sections (excepting those

of orthopædics and dermatology, from whom no contributions have been received) towards meeting the expected deficiency resulted in the collection of £646 0s. 6d. In consequence, however, of editorial curtailment of some of the papers and discussions, and the unexpected receipt of a sum of £347 0s. 7d. by sales of the Transactions (up to date), the publishers' provisional estimate proved to have been excessive, with the result that the honorary treasurers found themselves with a balance of £337 19s. 8d. at the bank, as well as with a credit balance with the publishers of £59 2s. 4d. Since the sum realised by the special appeal was subscribed for the exclusive object of completing the Transactions, the finance committee decided that the balance of the money should be returned to the respective donors in proportion to the amount subscribed, and this decision has been already carried into effect. It may be noted that in spite of considerable curtailment the volumes of Transactions extend to the formidable total of 12,498 pages. The finance committee wishes to draw special attention to the remarkable promptitude and success with which this great undertaking has been carried out by the editorial secretaries of sections and the editorial committee, and also to the excellence with which the volumes, printed in three languages, have been produced, in a space of little more than six months, by the Oxford Press.

Now that all expenditure has been met, a sum of £49 1s. 2d. lies in the hands of the treasurers, which may still be slightly augmented by the sale of further copies of the Transactions, and it remains for the general committee to decide what shall be done with the eventual balance.

Mr. D'ARCY POWER moved, and the GENERAL SECRETARY seconded, and it was resolved that the following gentlemen be nominated as members of the National Committee of Great Britain and Ireland for the purposes of the International Congresses of Medicine, with power to add to their number: Dr. Theodore Dyke Acland, Sir Clifford Allbutt, K.C.B., Professor F. W. Andrewes, Sir Charles Ball, Bart., Mr. C. A. Ballance, M.V.O., Professor H. G. Barling, Sir James Barr, Dr. E. F. Bashford, Sir A. A. Bowlby, C.M.G., Mr. Stanley Boyd, Sir J. Rose Bradford, K.C.M.G., Dr. Mitchell Bruce, Sir Lauder Brunton, Bart., Dr. Dudley Buxton, Sir John Byers, Sir Francis H. Champneys, Bart., Sir Havelock Charles, G.C.V.O., Mr. Arthur Cheatle, Sir W. Watson Cheyne, Bart., C.B., Sir T. S. Clouston, Mr. Treacher Collins, Sir James Crichton-Browne, Sir Anderson Critchett, Bart., C.V.O., Sir Halliday Croom, Sir Bertrand Dawson, K.C.V.O., Dr. J. Gordon Dill, Professor A. F. Dixon, Sir Dyce Duckworth, Bart., Sir Frederick Eve, Mr. Hurry Fenwick, Sir David Ferrier, Dr. Magee Finny, Sir J. Kingston Fowler, K.C.V.O., Professor Sir Thomas Fraser, Dr. Galloway, Dr. Garrod, Sir Alfred Pearce Gould, K.C.V.O., Dr. Dundas Grant, the Director-General of the Medical Department of the Navy, the Director-General of the Army Medical Service, the Medical Adviser to the India Office, Dr. de Havilland Hall, Dr. C. O. Hawthorne, Sir Wilmot Herringham, Sir F. W. Hewitt, M.V.O., Mr. W. H. H. Jessop, Dr. Robert Armstrong-Jones, Mr. Robert Jones, Sir Alfred Keogh, K.C.B., Dr. Percy Kidd, Mr. Ernest Lane, Sir Arbuthnot Lane, Bart., Mr. J. B. Lawford, Colonel Sir William B. Leishman, Professor J. A. Lindsay, Professor Alexander Macalister, Sir Donald MacAlister, K.C.B., Sir Wm. Macewen, Sir John McFadyean, Mr. G. H. Makins, C.B., Professor Howard Marsh, Dr. Mercier, Sir J. W. Moore, Sir Henry Morris, Bart., Sir Malcolm Morris, K.C.V.O., Dr. F. W. Mott, Sir Berkeley G. A. Moynihan, Sir Shirley Murphy, Professor G. R. Murray, Sir T. Myles, Dr. Newsholme, C.B., Sir Thomas Oliver, Sir William Osler, Bart., Sir George Hare Philipson, Mr. D'Arcy Power, Sir James Reid, Bart., G.C.V.O., K.C.B., Professor Arthur Robinson, Dr. Rolleston, Sir Ronald Ross, K.C.B., Dr. Amand Routh, Dr. F. M. Sandwith, Professor R. Saundby, Sir Edward Schäfer, Mrs. Scharlieb, Sir Felix Semon, K.C.V.O., Sir Seymour Sharkey, Professor S. G. Shattock, Professor Sherrington, Professor T. Sinclair, Dr. Percy Smith, Dr. Herbert Spencer, Dr. Squire Sprigge, Professor Starling, Dr. G. F. Still, Dr. G. A. Sutherland, Mr. Charters Symonds, Dr. Fred. Taylor, Professor Alexis Thomson, Professor Arthur Thomson, Sir StClair Thomson, Professor Thorburn, Sir John Tweedy, Mr. E. F. White, Dr. Hale White, Professor Sinclair White, Sir Arthur Whitelegge, K.C.B., Sir William Whitla, Dr. Dawson Williams, and Sir Almroth Wright. President: Sir Thomas Barlow, Bart., K.C.V.O. Secretaries: Dr. Clive Riviere, 19, Queen Anne-street, W., and Mr. H. J. Paterson, 9, Upper Wimpole-street, W.

The following resolutions were passed by the meeting arising out of the report:—

1. That it be left to the officers of the Congress to decide how the eventual balance from the general funds should be disposed of.

2. That the Royal Society of Medicine be asked to deposit the minute books and other records of the Congress in their library.

The meeting terminated with a brief speech from the President, Sir THOMAS BARLOW, expressing the gratitude of all concerned in the working of the Congress to the secretaries of the various sections, and especially to the secretary-general, Sir Wilmot Herringham.

PUBLIC HEALTH ADMINISTRATION IN EGYPT DURING 1913.

Earl Kitchener, in his Report on the Finances, Administration, and Condition of Egypt and the Sudan in 1913, publishes an annual summary of progress, in continuation of the intellectual and literary reports with which Lord Cromer used to charm us.

In spite of the abnormally low Nile of 1913, followed by a shortage of water which was the worst on record for more than a century, the year's progress was far more satisfactory than might have been anticipated. Famine, the necessary accompaniment in the past of a very low Nile flood, was averted by the thickening and heightening of the Assuan dam, which fortunately had just been completed. Sanitary improvements depend upon the state of the Treasury, and funds in rainless Egypt are dependent upon agriculture, which in its turn requires every year a wealth of Nile water.

The Public Health Department.

Space compels us to restrict ourselves to the Public Health Department, which now, for the first time in its history, has a strictly scientific Director-General in Sir David Semple. In order to give him a freer hand for dealing with the endemic diseases of the country two sections have been pruned away; the two lunatic asylums have been made into a separate department under Dr. J. Warnock, and the veterinary section and school have been transferred to the Ministry of Agriculture. History in Egypt invariably repeats itself, and a new Board of Health, with consultative and advisory powers only, has been created to assist the Director-General. We may hope that it will prove more useful than its predecessor, which came into existence in 1825 and was abolished in 1884, chiefly because it was incompetent to deal with the cholera epidemic which devastated Egypt soon after our occupation of the country.

For many years the energy of the Public Health Department has been principally occupied in fighting three epidemic diseases—plague, cholera, and rinderpest; but Lord Kitchener has now decreed that the chief endemic diseases, such as ankylostomiasis, bilharziasis, pellagra, and typhus fever, must be seriously studied and taken in hand. He rightly points out that the equipment of hospitals for treating the sick does not strike at the root of the evil, and that preventive measures must begin with village sanitation. He has already persuaded the villagers to fill up many of their ponds, which are fruitful sources of bilharzial and other infection. The land thus reclaimed is useful for providing open spaces for the inhabitants of the villages, which consist of overcrowded mud huts, unventilated, and for the most part unprovided with latrines. With the help of prison labour 109 ponds, with an area of 98 acres, were filled in during the year. The lines upon which he thinks sanitary progress in the villages should proceed are (1) education of the people in the causes and prevention of their common diseases; (2) formation of partly trained inspectors of the sergeant class to work under the district doctors; (3) improvement of houses and water-supply, with the gradual introduction of simple latrines.

Travelling Hospitals: Campaign against Ankylostomiasis.

The success of the travelling ophthalmic hospitals and dispensaries, which take the operator and treatment into the heart of the country, has been so great that the Public Health Department determined to imitate this system, and accordingly last September a temporary ankylostoma hospital was opened outside the town of Kalliub, about one hour's distance by train from Cairo. The ankylostomiasis campaign will also include investigation into bilharziasis and pellagra, because the unfortunate peasant is often the victim of all three scourges, and in order to ensure that it be started with all proper experience of organisation and of the habits and customs of the people it has been placed directly under the control of Mr. A. F. MacCallan, who will, therefore, be unable to concentrate his energy exclusively upon the campaign against ophthalmia. This latter can safely be trusted to other hands, for there are now 17 special ophthalmic hospitals in various parts of the country, all provided during the last few years. The oculists, English and Egyptian, had the satisfaction during the year of curing some 25,000 patients and of performing 30,000 operations, mostly on young people, for the relief of trachoma and ingrowing eyelashes. When a travelling ophthalmic hospital has been in one of the small towns for six months and has been crowded every day with eager outpatients, it is now not uncommon for the local Egyptian authorities to wake up to the need of a permanent eye dispensary, which is thus sometimes provided from the local rates.

The first ankylostoma hospital consists of 100 beds for both sexes, sheltered in tents or huts of matting, the only camp furniture necessary being wooden trestle beds with matting to lie upon and blankets to lie beneath. Great attention is paid to the latrines, which are screened by walls of matting, because their cleanliness and the microscopical examination of the excreta are obviously of educative value, a value not less important than ridding the individual of his intestinal parasites. Since 17 per cent. of the Egyptian lunatics are found to be pellagrous, it is surely time to find out how many of the sane are affected, and we are glad to see that Lord Kitchener looks forward to "a prolonged, well-organised, and thoroughly scientific investigation of pellagra in connexion with the ankylostomiasis campaign."

Infant Mortality.—Duties of the Village Barber.

Lord Kitchener has shown his interest in public health problems by devoting one-seventh of the report to their consideration, and he is evidently well aware of the waste of life caused by the high rate of infantile mortality. He finds that this is mainly due to the complete ignorance of the midwives and of mothers. It is hoped to remedy this backward civilisation by increasing the number of maternity schools and children's dispensaries. In the former the village midwives receive a course of training under an English matron, and in the dispensaries, which are more popular with the poor than the Government hospitals, the children are treated by medical men who volunteer for the purpose, while the mothers are instructed by an English nurse in the principles of cleanliness, nursing, and diet of sick children.

The village barber, unpaid by the Government, but recognised as the humblest rank of the sanitary hierarchy, is legally authorised to vaccinate, circumcise, and apply leeches, cupping vessels, and simple dressings, but he is forbidden to prescribe drugs. Among other duties he has to examine male corpses and to cause such diagnosis as he thinks fit to be entered in the village register as the official cause of death. Attempts are now being made to provide a better class of man, able to read and write, and trained in a hospital for three months, when, if he passes the necessary examination, he is certified as "trained in first aid." The number of patients seen by the barber when he returns to his village varies, of course, and, like other forms of practice, depends upon the personality of the man. We are told of one very successful barber who during the year saw 256 ophthalmic patients, 334 ordinary cases, and sent three others for treatment to the medical officer. On the other hand, some barbers get little or no practice. The provincial councils spent during the year £2700 on training village barbers and supplying them with first aid equipment. Many of these reforms were begun some years ago, but there is no doubt that the vigorous personality of the present Agent and Consul-General is causing them to bear practical fruit. The area of the country infected by plague remains as before, but the total number of cases fell during the year from 884 to 654.

The School of Medicine.—Education of Girls.

The School of Medicine continues to flourish, with a total of 258 students, but it is still difficult to find young Egyptians who are willing to devote their lives to the purely scientific and less remunerative branches of the medical profession. Three additional posts have been created, which for long have been wanted, assistants to the professors of biology, chemistry, and anatomy. There are also 209 Egyptian students who are now studying medicine in Europe, mostly unconnected with the Egyptian Government.

The ruined condition of the buildings at Kasr-el-Ainy Hospital in Cairo, where all the young men and women who enter the profession are trained in hospital life, is not referred to in this report, but it is obvious that a military barrack, constructed more than a century ago and now past repair, is unfitted to serve as a model of what a great hospital ought to be.

The most wonderful change at work in Egypt is the recent public interest in the education of girls. In any country this would be noteworthy, but in Egypt, where only two women in every 1000 can read their own language, while still fewer can write it, this constitutes a silent revolution of the greatest possible importance. Elementary schools for girls are springing up, in which needlework, cooking, laundry, and elementary hygiene are taught, in addition to reading, writing, arithmetic, and the Koran. In defiance of all tradition and without losing caste, it is now possible for an unmarried Egyptian girl, who has been trained as a teacher in Cairo, to leave her home and migrate to the provinces to take charge of one of these new schools for girls. She thus often becomes the breadwinner of the family, for her salary may rise to £300 a year, perhaps ten times more than her own father has ever earned. After centuries of prejudice both men and women seem to be realising a verse of the Koran: "A man can find Paradise at his mother's feet."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 8507 births and 4421 deaths were registered during the week ended Saturday, July 4th. The annual rate of mortality in these towns, which had been 13·5, 12·9, and 12·1 per 1000 in the three preceding weeks, rose again to 12·7 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·8, against 13·1 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 5·1 in Edmonton, 5·5 in Devonport, 5·9 in Ealing and in Swindon, and 6·1 in Wimbledon, to 18·8 in Plymouth, 19·3 in Barnsley, 19·4 in Walsall, 19·9 in Bootle, and 20·0 in Oldham.

The 4421 deaths from all causes were 228 more than the number in the previous week, and included 444 which were referred to the principal epidemic diseases, against 390 and 394 in the two previous weeks. Of these 444 deaths, 130 resulted from measles, 116 from infantile diarrhœal diseases, 95 from whooping-cough, 64 from diphtheria, 23 from scarlet fever, and 16 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3 per 1000, and was 0·2 more than the rate in the previous week. The deaths attributed to measles, which had been 119, 140, and 144 in the three preceding weeks, fell to 130 last week, and caused the highest annual death-rates of 1·3 per 1000 in Liverpool and in Preston, 1·7 in Rochdale, and 3·5 in Oldham. The fatal cases of whooping-cough, which had been 111, 99, and 93 in the three preceding weeks, rose to 95 last week; the highest death-rates from this disease were 1·3 in Salford, 1·5 in West Bromwich, 1·8 in Great Yarmouth, and 1·9 in Barnsley. The deaths from diphtheria, which had been 56, 40, and 35 in the three preceding weeks, rose to 64 last week; the highest death-rate from this disease was 1·1 in Cardiff. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 69, 79, and 79 in the three preceding weeks, rose to 116 last week, and included 26 in London, 11 in Birmingham, 9 in Liverpool, 8 in Manchester, and 6 each in Birkenhead and in Sheffield. The

deaths from scarlet fever, which had been 24, 24, and 30 in the three preceding weeks, fell to 23 last week, and included 6 in Manchester, 3 in London, and 2 in Salford. The deaths from enteric fever, which had been 16, 8, and 13 in the three preceding weeks, rose again to 16 last week, and included 5 in London and 2 in Newcastle-on-Tyne.

The number of scarlet fever patients under treatment in the London Fever and the Metropolitan Asylums Hospitals, which had steadily increased from 2862 to 3088 in the seven preceding weeks, further rose to 3092 on Saturday last; 442 new cases were admitted during the week, against 391, 405, and 440 in the three preceding weeks. These hospitals also contained on Saturday last 1089 cases of diphtheria, 286 of whooping-cough, 61 of measles, and 41 of enteric fever, but not one of small-pox. The 1148 deaths from all causes in London were 103 more than the previous number, and corresponded to an annual death-rate of 13·3 per 1000. The deaths referred to diseases of the respiratory system, which had been 143, 163, and 144 in the three preceding weeks, fell to 126 in the week under notice, and were equal to the number in the corresponding week of last year.

Of the 4421 deaths from all causes in the 97 towns, 192 resulted from different forms of violence and 363 were the subject of coroners' inquests. The causes of 33, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London, Portsmouth, Bristol, Leicester, Nottingham, Salford, Bradford, Leeds, Newcastle-on-Tyne, and in 69 other smaller towns. Of the 33 uncertified causes of death, 5 were registered in Liverpool, and 3 each in Birmingham and in Darlington.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1216 births and 621 deaths were registered during the week ended Saturday, July 4th. The annual rate of mortality in these towns, which had been 14·4, 14·6, and 13·8 per 1000 in the three preceding weeks, rose to 14·1 per 1000 in the week under notice. During the thirteen weeks of last quarter the mean annual death-rate in these towns averaged 15·5, against a corresponding rate of 13·8 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 3·1 in Falkirk, 9·7 in Paisley, 12·1 in Coatbridge, and 12·2 in Edinburgh, to 15·2 in Glasgow, 15·7 in Ayr, 18·0 in Aberdeen, and 20·3 in Hamilton.

The 621 deaths from all causes were 16 more than the number in the previous week, and included 41 which were referred to the principal epidemic diseases, against 67 and 52 in the two preceding weeks. Of these 41 deaths, 13 resulted from infantile diarrhœal diseases, 12 from whooping-cough, 9 from measles, 5 from diphtheria, and 1 each from scarlet fever and enteric fever. The mean annual death-rate from these diseases was equal to 0·9 per 1000, or 0·4 less than the rate recorded in the 97 large English towns. The deaths attributed to infantile diarrhœal diseases, which had been 10, 21, and 10 in the three preceding weeks, rose to 13 during the week under notice, and included 4 in Glasgow, 3 in Hamilton, and 2 in Aberdeen. The fatal cases of whooping-cough, which had been 15, 20, and 18 in the three preceding weeks, fell to 12 last week and included 10 in Glasgow. The deaths from measles, which had been 12, 17, and 7 in the three preceding weeks, rose to 9 last week; 4 of these were registered in Glasgow and 3 in Dundee. The deaths from diphtheria, which had been 2, 6, and 8 in the three preceding weeks, fell to 5 last week and included 3 in Glasgow. The fatal case of scarlet fever was registered in Motherwell, and that of enteric fever in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 95, 77, and 64 in the three preceding weeks, were 63 last week; 33 deaths were referred to different forms of violence, against 24 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 615 births and 375 deaths were registered during the week ended Saturday, July 4th. The annual rate of mortality in these towns, which had been 17·9, 17·7, and 15·7 in the three preceding weeks, rose to 16·2 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 19·0 per 1000; in the 97 large English towns the corresponding rate did not exceed 13·8, while in the 16 Scotch towns it was equal to 15·5 per 1000. The annual death-rate in the week under notice was equal to 16·3 in Dublin (against 13·3 in London and 15·2 in Glasgow), 17·0 in Belfast, 20·4 in Cork, 14·0 in Londonderry, 20·3 in Limerick, and 9·5 in Waterford, while in the 21 smaller towns the mean rate was 13·7 per 1000.

The 375 deaths from all causes were 11 below the number in the previous week, and included 47 which were referred to the principal epidemic diseases, against 50 and 36 in the two preceding weeks. Of these 47 deaths, 15 resulted from measles, 14 from infantile diarrhœal diseases, 10 from whooping-cough, 4 from diphtheria, 3 from scarlet fever, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·1 per 1000, against 1·3 and 0·9 per 1000 in the English and Scotch towns respectively. The deaths attributed to infantile diarrhœal diseases, which had been 10, 15, and 11 in the three preceding weeks, rose to 14 last week, and included 7 in Belfast, 4 in Dublin, and 2 in Cork. The fatal cases of measles, which had been 16, 19, and 13 in the three preceding weeks, rose to 15 last week, and included 9 in Belfast and 2 each in Dublin and in Lurgan. The deaths referred to whooping-cough, which had been 8, 3, and 6 in the three preceding weeks, rose to 10 last week; 7 of these 10 deaths were registered in Belfast and 2 in Cork. The fatal cases of diphtheria, which had been 1, 2, and 2 in the three preceding weeks, rose to 4 last week, and included 2 in Dublin. The 3 deaths from scarlet fever, 2 of which occurred in Belfast, were slightly below the average for recent weeks. The death ascribed to enteric fever was certified as "paratyphoid" and occurred in Dublin.

The deaths referred to diseases of the respiratory system, which had been 67, 68, and 57 in the three preceding weeks, were 41 in the week under notice. Of the 375 deaths from all causes, 110, or 29 per cent., occurred in public institutions and 7 resulted from various forms of violence. The causes of 17, or 4·5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified deaths did not exceed 0·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeons: P. D. M. Campbell to the *Wildfire*, additional, for disposal; and F. G. Wilson to the *Victory*, additional, for disposal.

ARMY MEDICAL SERVICE.

Colonel Harry S. McGill, from the Half-pay List, retires on retired pay (dated July 8th, 1914). Colonel Thomas J. O'Donnell, D.S.O., on completion of four years' service in his rank, is placed on the Half-pay List (dated July 7th, 1914). Brevet-Colonel Samuel Hickson, Honorary Surgeon to the King, from the Royal Army Medical Corps, to be Colonel, vice T. J. O'Donnell, D.S.O., to half pay (dated July 7th, 1914).

ROYAL ARMY MEDICAL CORPS.

Major John Hennessy to be Lieutenant-Colonel (dated July 7th, 1914).

Captain William W. Boyce, from the half-pay list, is restored to the establishment (dated June 29th, 1914).

Colonel S. Hickson has taken up duty at the Horse Guards as Inspector of Medical Services on the staff of the Inspector-General of the Forces.

Lieutenant-Colonel T. du B. Whaite has been transferred from Woolwich to the Military Hospital at Lahore as Senior Medical Officer. Lieutenant-Colonel J. C. O'Connor has been appointed Deputy Assistant Director of Medical Services to the Irish Command Headquarters Staff. Lieutenant-Colonel J. H. Daly has been appointed to hold charge of the Military Hospital at Belfast. Lieutenant-Colonel G. Cree has taken up duty as Assistant Director of Medical Services at Bordon. Lieutenant-Colonel G. A. T. Bray has been appointed Deputy Surgeon to the Royal Hospital at Chelsea. Lieutenant-Colonel O. L. Robinson has taken up duty as Professor of Tropical Medicine at the Royal Army Medical College, Grosvenor-road. Lieutenant-Colonel T. McCulloch has been appointed to hold charge of the Medical Division and Sanatorium at the Royal Victoria Hospital, Netley. Lieutenant-Colonel D. M. O'Callaghan has been placed under orders for service abroad during the coming trooping season. Lieutenant-Colonel F. Smith, D.S.O., has been appointed Medical Inspector of Recruits to the Irish Command Headquarters Staff. Lieutenant-Colonel B. H. Scott has taken up duty in the London District.

Major D. L. Harding has been appointed to hold charge of the Military Hospital at Mullingar. Major H. W. Long has taken up duty at Netheravon. Major M. H. G. Fell has been appointed Deputy Assistant Director of Medical Services, Aldershot Command. Major J. G. Gill has been appointed to the Southern Command. Major R. L. Popham has been transferred from the Cork District to the Military Hospital at Nowshera Cantonment. Major F. E. Gunter has been appointed to hold medical charge of the Cadets at the Royal Military College, Sandhurst, on transfer from Tidworth.

Major J. Matthews has arrived home for duty from the Ninth (Secunderabad) Division. Major W. Davis has taken up duty at Naini Tal. Major A. G. Thompson has been appointed to the Southern Command. Major G. J. A. Ormsby has arrived home for duty from Meerut Cantonment. Major J. L. Jones has been transferred from the Military Hospital at Calicut Cantonment to Wellington Sanatorium. Major J. F. Martin has been appointed to the Aldershot Command. Major J. C. Kennedy has been appointed to the Military Hospital at Lebong Cantonment on transfer from Lucknow. Major H. G. Pinches has been appointed to the Military Hospital at Sheerness. Major R. McK. Skinner has been transferred from the Curragh Camp to the Military Hospital at Lahore. Major H. S. Thurston has been placed under orders for service abroad during the coming trooping season. Major W. J. P. Adye-Curran has been appointed Specialist in Advanced Operative Surgery to the Military Hospital at Cosham. Major T. H. M. Clarke, C.M.G., D.S.O., has taken over medical charge at the Royal Hibernian Military School, Phœnix Park, Dublin. Major W. J. S. Harvey has been appointed Company Officer to No. 29 Company, Royal Army Medical Corps at Jamaica. Major C. E. Fleming has been appointed to hold charge of the Military Families Hospital at Roberts's Heights, Pretoria. Major F. McLennan has been appointed Adjutant to the School of Instruction at Aberdeen. Major C. E. Pollock has joined for duty at Sierra Leone. Major F. S. Walker has been appointed to hold charge of the Military Hospital at Fort Camden. Major C. R. L. Ronayne has arrived home on leave of absence from Gibraltar. Major H. A. Bransbury has been granted six months' general leave of absence. Major E. P. Sewell has been appointed Specialist Sanitary Officer in Ceylon. Major W. Riach has been appointed Specialist in Ophthalmology to the Queen Alexandra Military Hospital at Grosvenor-road. Major H. S. Roch has been appointed to Pretoria.

Captain D. T. MacCarthy has been granted six months' leave of absence home from India with permission to revert to the Home Establishment at its expiration. Captain F. C. Lambert has been transferred from Pembroke Dock to the Military Hospital at Poona Cantonment. Captain R. G. S. Gregg has taken up duty at Aden on transfer from Karachi. Captain A. C. Amy has joined at Bury. Captain J. A. Anderson has been appointed to the Royal Army Medical College for the course of instruction for promotion to the rank of Major. Captain H. B. Kelly has been placed under orders for service abroad. Captain W. W. Browne has been appointed Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Ahmednagar. Captain H. Harding has been appointed to the Military Hospital at Warley. Captain V. C. Carruthers has been granted leave of absence for one month. Captain W. R. Galwey has been appointed Deputy Assistant Director of Medical Services (Sanitary Branch) to the Ninth (Secunderabad) Division. Captain J. H. Graham has taken up duty at Cosham. Captain W. Mitchell has been appointed to hold charge of the Military Hospital at Wrexham. Captain C. Scaife has arrived home for duty from India. Captain J. A. Manifold has been appointed to hold charge of the Military Hospital at Warwick Camp, Bermuda. Captain H. L. Howell has been appointed to hold charge of the Native Section Hospital at Kirkee Cantonment. Captain D. F. Mackenzie has been appointed Staff-Surgeon at Meerut. Captain C. H. Stringer has joined at Jamaica.

Lieutenant R. K. Mallam has been transferred from Bordon to the Second (Rawal Pindi) Division. Lieutenant W. McNaughtan has taken up duty at Quetta on transfer from the Royal Victoria Hospital at Netley. Lieutenant M. Burnett has embarked for India. Lieutenant J. H. M. Frobisher has been appointed to Lucknow Cantonment. Lieutenant W. B. Stevenson has been transferred from Deepcut to Rawal Pindi Cantonment. Lieutenant G. F. Allison has been appointed to the Military Hospital at York on transfer from Strensall. Lieutenant W. L. Webster has been transferred from Limerick to the Military Hospital at Cairo. Lieutenant D. T. Large has been appointed to the Fifth (Mhow) Division. Lieutenant R. W. Richardson has been appointed to the Military Hospital at Jubbulpore. Lieutenant E. B. Allnutt has been transferred from Poona Cantonment to the Military Hospital at Purandhur. Lieutenant A. G. Bigham has taken up duty at Rawal Pindi.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel M. A. Ker has been appointed to officiate as Assistant Director of Medical Services to the Derajat and Bannu Brigades, vice Colonel J. Crimmin, V.C. C.B., C.I.E., granted leave of absence. Lieutenant-Colonel L. F. Childe has taken up duty as Professor of Medicine and Therapeutics at the Grant Medical College, Bombay. Lieutenant-Colonel E. H. Wright has been appointed District Medical and Sanitary Officer and Superintendent of the Medical School at Tanjore. Lieutenant-Colonel H. E. Banatvala has been confirmed in the appointment of Inspector-General of Civil Hospitals and Prisons and Sanitary Commissioner to the Government of Assam. Lieutenant-Colonel G. M. C. Smith has taken up duty as Superintendent of the District Prison at Ludhiana. Lieutenant-Colonel E. P. Maynard, professor of ophthalmic surgery at the Medical College, Calcutta, has been granted six months' leave of absence home from India. Lieutenant-Colonel H. Fooks, medical officer of the 15th Lancers, has been appointed to officiate as Assistant Director of Medical Services to the Bombay Brigade, vice Colonel H. Hendley, granted seven months' leave of absence home from India.

Major C. Hudson, D.S.O., has taken over substantive medical charge of the 2nd Rajputs at Muscat. Major D. H. F. Cowin has joined at Patiala. The services of Major J. M. Woolley have been placed permanently at the disposal of the Government of Burma. Major E. A. C. Matthews has been appointed Honorary Surgeon to H.E. the Viceroy and Governor-General of the East Indies.

Captain C. H. Reinhold, civil surgeon at Bijnor, has been transferred. Captain W. J. Powell has joined at Kasauli. Captain G. A. Jolly, officiating civil surgeon at Fategarh, has been granted nine months' combined leave. Captain A. F. Babonau has joined at the Naga Hills District. Captain B. Higham has been appointed to hold medical charge of the Sind Rifles, vice Colonel B. B. Grayfoot, transferred. Captain H. B. Scott has been appointed Pathologist to the General Hospital at Rangoon, vice Captain A. Whitmore, granted leave of absence. Captain W. Gillit, superintendent of the Bhagalpur Central Prison, has been appointed to officiate as Civil Surgeon at Bhagalpur, vice Lieutenant-Colonel J. C. S. Vaughan, granted leave of absence. Captain I. D. Jones has been appointed Professor of Materia Medica at the Grant Medical College, Bombay.

Lieutenant N. C. Kapur has been appointed to hold medical charge of the 31st Mountain Battery and Frontier Garrison Artillery.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

No. 18 Field Ambulance: Lieutenant-Colonel (Honorary Major in the Army) A. A. Watson, R.A.M.C. (T.), to be Lieutenant-Colonel (dated May 1st, 1914). Captain Wilson H. P. Hey resigns his commission (dated July 4th, 1914).

The under-mentioned to be Lieutenants (on probation):—Cadet Corporal William Siegfried Dawson, from the Oxford University Contingent, Officers Training Corps (dated May 20th, 1914). Cadet Griffith Ivor Evans, from the Oxford University Contingent, Officers Training Corps (dated May 20th, 1914). Cadet Sergeant Thomas William Clarke, from the Edinburgh University Contingent, Officers Training Corps (dated May 26th, 1914). Cadet Sergeant John Cullenan, from the Belfast University Contingent, Officers Training Corps (dated June 4th, 1914). Cadet Arthur George Fisher, from the Dublin University Contingent, Officers Training Corps (dated June 5th, 1914).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Highland Mounted Brigade Field Ambulance, Royal Army Medical Corps: John Broadfoot to be Lieutenant (dated May 1st, 1914).

3rd East Lancashire Field Ambulance, Royal Army Medical Corps: Captain Wilson H. P. Hey resigns his commission (dated July 4th, 1914).

Attached to Units other than Medical Units.—Lieutenant-Colonel (Honorary Major in the Army) Andrew A. Watson is seconded for service with No. 18 Field Ambulance, Royal Army Medical Corps (Special Reserve) (dated May 1st, 1914). Captain Samuel M. Sloan to be Major (dated May 22nd, 1914). Captain John Orr resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 4th, 1914).

Supernumerary for Service with the Officers Training Corps.—Lieutenant Patrick Nicol, serving with the Aberdeen University Contingent, Senior Division, Officers Training Corps, resigns his commission (dated July 4th, 1914).

ST. JOHN AMBULANCE BRIGADE.

On July 4th 1500 members of the Prince of Wales's Corps of the St. John Ambulance Brigade paraded in Hyde Park for their annual inspection. Surgeon-General Sir Arthur W. May, Director-General of the Medical Department of the Royal Navy, presented the trophies and long service medals

Surgeon-General G. J. H. Evatt, C.B., will give an address to the St. Marylebone Red Cross Camp at Eastcott Hall, on July 12th (Sunday), at 7 P.M., on "The Real Florence Nightingale."

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

LIVERPOOL.

The University of Liverpool.

THE Chancellor of the University (the Earl of Derby) presided at a special congregation held on Saturday, July 4th, in St. George's Hall, when degrees were conferred on the successful students in the recent examinations. The Vice-Chancellor (Sir Alfred Dale) announced the appointments to fellowships and studentships and the names of the prize-winners, and then closed the proceedings with the Latin formula of dismissal. Mr. Keith W. Monsarrat has resigned the post of Dean of the Faculty of Medicine, and Professor J. M. Beattie has been nominated in his place.

National Association for the Prevention of Infant Mortality Conference.

The National Association for the Prevention of Infant Mortality and for the Welfare of Infancy held its annual conference in Liverpool on July 2nd and 3rd. Mr. Herbert Samuel, the President of the Local Government Board, was to have delivered the inaugural address, but was detained in London. He sent a letter in which he said it had been a great satisfaction to him to see the remarkable reduction that had taken place in the rate of infant mortality during the last few years, and that whatever assistance the Local Government Board could render to the great object the association had in view would be gladly given. In the absence of Mr. Samuel, the opening address to the conference was delivered by Mr. J. Herbert Lewis, Parliamentary Secretary to the Board, who laid stress upon the value of coöperation between public and voluntary bodies in tackling the problem of infant welfare. The official work, central and local, of the country, he said, was changing. The day of stiff official starch was past. They needed and had something more pliable, more human, and something more touched with the spirit and needs of the common people, with none of the meretricious superiority of a mere narrow bureaucracy. Many interesting papers were read subsequently. Among the most interesting were those of Dr. A. K. Chalmers on Ante-natal Hygiene; Dr. Eric L. Pritchard on the Scope and Functions of Schools for Mothers; Dr. E. W. Hope on the Aims, Objects, and Methods of Sterilisation of Milk; and Dr. C. W. Saleeby on the Nurture of the Race.

Appointment for Professor B. Moore.

The Liverpool University is about to lose the services of Professor Benjamin Moore, whose important appointment at the new National Health Laboratory has already been noted in your columns. There will be three sections in the laboratory. One will be concerned with bacteriology, the second with experimental physiology, while the third will embrace applied physiology and hygiene. Professor Moore will be attached to the third of these, and he will have as his colleague Dr. Leonard Hill. For 12 years Professor Moore has occupied the Johnston chair of biochemistry at the Liverpool University, and for some time he was dean of the medical faculty. He became especially prominent during the time of the Insurance Bill controversy, when he was the chief advocate of a State medical service. To the Liverpool University the value of his work is impossible adequately to estimate, and the council have received the intimation of his resignation with regret, coupled with good wishes for success in his important Government work in London. By the resignation of Professor Moore another chair in the medical faculty is rendered vacant, no one as yet having been appointed to the chair of physiology to succeed Professor C. S. Sherrington, who earlier this year went to Oxford.

After-care of School Children.

In THE LANCET of June 6th, p. 1641, a reference was made to a decision of the Liverpool education committee to transfer the following up of ailments of school children from the medical department to that of the director of education. These proposals, however, were not pursued, and were withdrawn by the chairman of the education committee from consideration by the city council. The matter therefore remains as before in the medical department.

Measles in Liverpool.

Owing to the large number of cases of measles among the younger children in the city the medical officer of health, Dr. E. W. Hope, has ordered the closing of the infant departments in all the schools in Liverpool. The officials of the health department expect that the closing of the schools for a fortnight and the holiday period of five weeks which will then ensue will have the desired effect of checking the outbreak. The present temperate weather is also a factor in stopping the spread of the disease.

St. Paul's Eye Hospital.

The annual meeting of the St. Paul's Eye Hospital was recently held at the town hall. The Lord Mayor presided, and moved the adoption of the report and balance sheet, the latter of which showed a carried forward deficit of £737. The St. Paul's Hospital recognised that prevention was more important than cure, and in this connexion he mentioned that one of the most prolific causes of blindness was ophthalmia neonatorum. The hospital had done much to prevent this class of blindness. There were other diseases of the eye which did not produce blindness, but which produced so much incapacity that it almost amounted to blindness, and it was in respect to these other diseases that the hospital had given so much assistance. He was sorry, under these circumstances, that the needs of the hospital had not been fully met by the subscription list, and that there was a serious deficiency. When the valuable work of the institution had been more fully recognised he trusted that the public would realise that it well deserved their support in their own interests as well as in the interests of humanity. Mr. C. S. Rigg seconded, and the report was adopted. Sir William Bowring and Dr. E. Stevenson proposed the re-election of the committee, and votes of thanks were accorded to the ladies' committee and the medical staff.

July 7th.

SCOTLAND.

Health of Edinburgh.

IN the report of the medical officer of health for this city (Dr. A. M. Williamson) for the year 1913, which has recently been issued, the death-rate of the city is the lowest ever recorded, and in this respect now compares most favourably with other large centres of population. Dr. Williamson directs special attention to the spread of cancer, compares its incidence and death-rate with those of tuberculosis, and deplores the comparatively slight attention paid to the former condition compared to the latter.

Honorary Degrees at Edinburgh University.

The summer graduation ceremony took place on July 3rd in the M'Ewan Hall, under the presidency of Sir William Turner, Vice-Chancellor of the University. The hall was filled in every part. Among the 13 recipients of honorary degrees were Dr. Byrom Bramwell, consulting physician to the Edinburgh Royal Infirmary, and Dr. F. W. Mott, pathologist of the London County Asylums. Professor James Mackintosh, dean of the Faculty of Laws, in presenting Dr. Bramwell and Dr. Mott for the degree of Doctor of Laws, referred to the former's rare acumen in diagnosis and sympathetic attitude to every advance in medical thought and practice, and to the latter's acknowledged leadership of medical opinion in the great and growing department of psychiatry, and in particular in the subject which he had made peculiarly his own—the pathology of the brain and mental disease.

The Royal Visit to Glasgow.

The King and Queen had an enthusiastic reception at Glasgow on July 7th. His Majesty first opened the Diamond Jubilee Memorial block at the Royal Infirmary, which has cost £500,000, and passed through some of the wards. He was much interested in the Lister relics which are preserved at the infirmary. In the afternoon Their Majesties visited the newly rebuilt Royal Hospital for Sick Children, and paid a brief call at the Western Infirmary.

The Drug Fund in Kincardineshire.

While the chemists in Aberdeenshire and in the city of Aberdeen have been in the unfortunate position of having deductions made from their drug accounts, their brethren in the adjoining county of Kincardineshire are more fortunate. Their accounts are not only to be paid in full, but in addition they are to receive a substantial bonus amounting approximately to 39 per cent. of the chemists' accounts.

July 7th.

IRELAND.

The Working of the National Insurance Act in Ireland.

IN the annual report on the working of the National Insurance Act just issued the statement is made that "the administration of benefits by societies in Ireland has been very satisfactory. The societies have shown a desire to deal with applications for benefit in as sympathetic a manner as possible consistent with their duties to their members as a whole." This represents an unduly optimistic view of the facts. While some societies are acting as the report states, others, including some of the largest and most important, place every obstacle in the way of a member obtaining his benefit. In some cases no medical certificate is accepted except that of the society's medical officer, and if a dissatisfied member wishes to appeal to a committee of complaints he must first lodge the sum of £1, which it is almost invariably impossible for him to do. Discontent is gradually growing, and boards of guardians throughout the country are complaining that sick people entitled to benefit are falling on the rates. The Athlone guardians, for instance, at their last meeting unanimously passed a resolution asking the Insurance Commissioners to dispense with the services of the "medical adviser" in their district.

Public Health Administration of Dublin.

Sir Charles Cameron, superintendent medical officer of health of Dublin, has issued a "Brief History of Municipal Public Health Administration in Dublin," which he has dedicated "to the corporation of that ancient city." The book includes a brief historical sketch of the evolution of sanitation in Dublin, and is also a reply to the recent report of the Departmental Committee on the Housing of the Working Classes in the city. As a historical sketch it furnishes a good deal of interesting information not easily accessible elsewhere. As a reply to the Departmental Committee the work is less satisfactory. The gravamen of the strictures on the work of the Dublin corporation lay in the charges (1) that they had failed to make full use of their existing powers; (2) that the officers of the corporation had failed to carry out the by-laws concerning tenement houses; and in particular (3) that rebates of taxes had been granted on property classified in the corporation books as "unfit for human habitation." The Departmental Committee gave full particulars of the failure of the corporation to exercise its powers, as, for instance, in its neglect to prepare and keep a register of tenements. To quote the work done by the corporation as regards water-supply, main drainage, and electric lighting, for which full credit should be given, is no answer to the charges. With regard to the second point Sir Charles Cameron admits the facts, but maintains that a rigid enforcement of the by-laws was impracticable. If the by-laws are unsuitable they should be amended rather than their habitual breach connived at. To the third point he makes no reply beyond discussing the details of one particular case.

Politics and Public Health in Belfast.

The medical officer of health reports that in the city of Belfast there are 934 houses occupied by more than one tenant, the inhabitants of these houses numbering 5073, and of these double-tenancy houses 535 are in one Parliamentary division. There can be no question that a number of these double-tenancy houses are manufactured to make Parliamentary votes. In cases where in such houses there is not access to proper sanitary conveniences it is the duty of the public health authorities to prosecute.

The Medical Officer of Health of Derry.

Dr. F. W. Craig has been appointed medical superintendent officer of health for the city of Derry, at a salary of £350 a year, and also tuberculosis officer, with a salary of £200 per annum.

A Grant to County Antrim Infirmary.

The county council of Antrim, after considerable discussion, decided on July 3rd, by a majority of one 8 to 7), to grant a supplemental contribution

of £100 for the year ending April 30th, 1914, towards the maintenance of the County Infirmary, Lisburn.

Water Famine in Dungannon.

Owing to the comparatively dry winter and summer many places in the north of Ireland are suffering from the prolonged drought, and among them is the old town of Dungannon, County Tyrone. Since July 5th the supply of water has been diminished to three hours in the morning and two and a half in the afternoon. The present supply, which was inaugurated 35 years ago, is totally unfit for the requirements of the residents of Dungannon.

July 7th.

PARIS.

Child Mortality and Alcoholism in Paris.

M. Paul Juillerat, a member of the Conseil d'Hygiène et de Salubrité de la Seine, and M. A. Filassier, head of the Statistical Department of the City of Paris, have published in the *Revue Philanthropique* the results of their researches on the causes of child mortality in Paris. Their work demonstrates forcibly the disastrous results of alcoholism. During the ten years 1903 to 1912 inclusive, out of 97,885 dead children, 53,619, or over half, were under 1 year. "Congenital debility" accounts for 12,342 of these deaths. Notwithstanding the difficulty in the present state of statistics of obtaining actual data in this matter, M. Juillerat and M. Filassier do not hesitate to attribute to alcoholism in the parents this enormous proportion of children affected with congenital debility. Interesting figures have also been furnished by Juquellier, Bourneville, and Magnan. Dr. Jacquet's statistics are also especially instructive. In the inquiry made by him between May 1st, 1912, and May 1st, 1913, at the Hôpital St. Antoine, he divided into the following three classes 396 patients examined by him who had a total of 879 children: (1) Moderate users of alcohol—those who drink habitually a litre of wine, alcoholic drinks, or occasional apéritifs—141 individuals, 305 births, 83 deaths; (2) excessive drinkers—those who drink habitually from 1½ to 2 litres of wine, alcoholic drinks, or frequent absinthes—108 individuals, 248 births, 115 deaths; (3) very excessive drinkers—those who drink habitually 2 litres or more of wine, apéritifs, and alcoholic drinks or absinthe usually and in abundance—147 individuals, 326 births, 244 deaths. This total of 396 individuals thus shows 879 children, of whom 442 died, 272 of them in infancy. Thus the progeny of these 396 parents, all alcoholic and more or less gravely toxic, shows a mean mortality of 50·28 per cent. M. Juillerat and M. Filassier further show that in different regions social or medical prevision has notably diminished the child mortality from diphtheria, pulmonary tuberculosis, tuberculous meningitis, syphilis, diarrhœa, and so forth. On the other hand, as regards congenital debility, which furnishes so considerable a proportion to these gloomy statistics, there has been practically no improvement.

The Paris Water-supply.

The present tropical heat, as in previous years, has aroused uneasiness on the drinking-water question. The temperature in Paris has reached 87·6° F. (32° C.) in the shade, and at once the use of water, which is ordinarily about 300,000 cubic metres daily, and which has even reached 400,000 cubic metres on occasion, jumped to 425,000. The normal provision of source water for the city of Paris in the month of July is from 310,000 to 320,000 cubic metres. Beyond this amount river water filtered in sand-beds at St. Maur and Ivry and then passed through an ozonising plant is used. This source can supply from 140,000 to 180,000 cubic metres of filtered water, giving a total supply of from 450,000 to 500,000 cubic metres for the daily use of the capital. In the future the supply from the sources of Provins, a scheme for which is now before Parliament, will furnish a daily supplement of 70,000 cubic metres, and work is at present going on to double the capacity of the filter beds at Ivry, which will then furnish 120,000 cubic metres instead of 60,000. The present time, however, is the most critical, for from July 14th an important proportion of the population leaves the city for the country or abroad. It is thought, therefore, that it will not be necessary hereafter to utilise unfiltered river water with the recommendation, which causes uneasiness, to the residents always to boil their water. The water from the filter beds is as safe as that from the source, though perhaps a little less fresh.

A Conference on Pellagra.

Dr. L. W. Sambon, of London, delivered a lecture at the Institut Pasteur on his theory as to the causation of pellagra, which, in his opinion, does not result, as has hitherto been thought, from the too exclusive use of spoiled maize, but is due to inoculation of the virus by the bite of the simulium fly. He also made a communication on the same subject to the Académie de Médecine.

July 6th.

AUSTRALIA.

Small-pox in Sydney.

CASES of small-pox still continue to occur in Sydney and suburbs at the rate of three to five cases daily, and the mild character of the disease has not been altered. As a result of public feeling in the matter of the refusal of the New South Wales Board of Public Health to isolate contacts, a conference was held in Melbourne and an agreement between the State and Federal authorities was arrived at under which the former were to have the use of the North Head quarantine for isolating dangerous contacts, but would vacate it if required on 24 hours' notice. Very little public interest is taken in the matter apart from the dispute between the authorities. A small epidemic has occurred at Bunbury, Western Australia, from a case introduced oversea from the East.

Remarkable Endurance.

Some time ago it was mentioned in this column that a young woman had given birth to a child on an excursion steamer in Hobson's Bay. The child died the next day, and the mother was recently prosecuted on a charge of concealment of birth. Evidence showed that the steamer left Port Melbourne early in the morning and about half an hour after departure the body of a living child was found in the lavatory. The steamer proceeded to Geelong and thence to Mornington, arriving at the latter place about midday. It was not till the arrival here that the mother was apprehended by a police constable who had taxed her with being the mother of the infant. Up to that time she had been sitting unconcernedly on deck with a young man. At the trial it was stated that this young man

had since married her. The jury found her not guilty.

Melbourne Medical School.

An appeal is being made in the public press for funds in aid of the medical school of the Melbourne University. It is said that accommodation is insufficient, and that the professors are without adequate assistance. A proposal has recently been made to transfer the school of anatomy to the new buildings of the Melbourne Hospital, but it is unlikely that the authorities will fall in with such an idea.

Clinical Research.

Mr. J. S. Horsfall has promised a sum of £500 for five years towards the establishment of chairs of clinical research in the Melbourne University. A small group of medical men have promised jointly another £500 per annum for the same term. At present the proposal is to divide this sum among the pathological departments of the three Melbourne teaching hospitals.

"*The Battle of the Lodges.*"

The Victorian Branch of the British Medical Association has not yet included any new arrangements with the Friendly Societies. The organisation committee, acting upon the advice of Dr. J. A. Macdonald, who recently visited Australia, has been engaged in creating a defence fund to re-imburse practitioners who might lose appointments in the event of any open rupture. This fund at latest publication amounted to about £5000. Meanwhile nothing has been done beyond arranging a conference between the branch and the societies. As matters stand the Friendly Societies are willing to increase the rates of contract work but will not listen to any wage-limit proposal for membership. In New South Wales the lodges have in some instances held out against the local profession. It is quite possible that some movement may be made to endeavour to bring the dispute under the jurisdiction of the Commonwealth Arbitration Court.

Cancer Research.

At a recent meeting of the Victorian Board of Public Health a resolution was carried requesting other State boards to join in asking the Federal Government to provide a sum of £50,000 to be devoted to cancer research on condition that an additional £50,000 was subscribed by the public. The council of the Melbourne University have instituted a cancer research scholarship which will date for three years from August 1st, 1914. The scholar appointed must proceed to Europe and America, and return to the Melbourne Hospital by 1915. He is to receive a salary of £250 per annum and £100 for expenses.

Baby Bonus.

The Federal Treasurer, Sir John Forrest, made a statement in the Federal House that under the maternity bonus scheme a sum of £1,032,000 had already been paid away. The scheme was introduced in October, 1912, and was estimated to cost £400,000 per annum, but the estimate has been considerably exceeded.

Housing Commission.

The Victorian Government has appointed a commission to inquire into the housing conditions of the city of Melbourne. Evidence has been given by several police officers in the more crowded suburbs, and although some undesirable arrangements were noted it cannot be said that any deplorable conditions have yet been disclosed.

Health of Adelaide.

The population of the city was estimated at 42,828, an increase of 305 for the year. The death-rate is given as 14·42 and infantile mortality figure at 63. Diphtheria was prevalent, 458 cases being reported, of which 293 were brought to Adelaide Hospital from outside districts. During the year 23 houses were condemned as unfit for habitation, and 18 ordered to be demolished. 1309 notices to repair dwellings were issued.

Venereal Prophylaxis.

A lay deputation accompanied by several medical men waited on the Premier of Victoria to urge that the Government should take measures for the provision of treatment of venereal disease and for the diffusion of information upon the subject. Mr. Watt expressed sympathy with the aims, and promised to continue the subsidy already paid for the provision of free Wassermann tests at the University, and to forward the educational scheme as far as might be desirable. He also undertook to introduce legislation for the detention of prisoners suffering from venereal disease until they were cured. The West Australian Government has made special provision for the treatment of venereal cases in the general hospitals of that State.

June 2nd.

Obituary.

CHARLES TANFIELD VACHELL, M.D. LOND., J.P., V.D.,

CONSULTING PHYSICIAN TO KING EDWARD VII. HOSPITAL, CARDIFF.

WE regret to record the death on July 2nd of Dr. C. T. Vachell, one of the most prominent medical practitioners at Cardiff and a leading public man in the life of the district. He had been seriously ill for some little time and was under treatment at Clifton when he died.

Charles Tanfield Vachell was born at Cardiff in 1848. He was the eldest son of John William Vachell, whose father had been twice mayor of Cardiff. He matriculated in the University of London from Hereford Cathedral School, and entered at King's College, London, in 1865, afterwards studying medicine at King's College Hospital. He qualified M.R.C.S. Eng. in 1869, and in the following year he obtained the M.B. degree of his University as well as the licences of the Royal College of Physicians of London and of the Society of Apothecaries. In 1874 he proceeded to the M.D. degree.

Dr. Vachell's long and successful association with the Cardiff Infirmary (now King Edward VII. Hospital) began almost immediately after he became qualified. The institution was then known as the Glamorgan and Monmouthshire Infirmary and Dispensary. In 1870 he was appointed house surgeon, and in 1879 he was made medical officer to out-patients. From 1882 to 1902 he served upon the active visiting staff first as surgeon, later as physician, and was appointed to the consulting staff 12 years ago. He was the joint founder 30 years ago of the Cardiff Provident Dispensary, and served with zeal and ability upon a number of public bodies and committees. Dr. Vachell was also for a considerable period a keen Volunteer, and retired from the Glamorgan Volunteer Artillery after 22 years' service with the rank of surgeon-lieutenant-colonel and the V.D. decoration. He was

very well known locally as an antiquarian and naturalist, taking a prominent part in the establishment of the National Museum of Wales and for many years keeping a daily record of the rainfall in the district.

Among Dr. Vachell's occasional contributions to medical literature were three papers which appeared in THE LANCET—Cystic Goitre Treated by Shelling Out, in 1886; Acute Nephritis from Sewer Air Poisoning, in 1894; and Notes of a Case of Ether-Pneumonia, in 1898. He had an extensive practice among the leading families of Cardiff and its neighbourhood, and his opinion and character were much valued by his professional colleagues.

Mr. P. Rhys Griffiths, senior surgeon to the King Edward VII. Hospital and chairman of the medical board, writes: "Dr. Vachell was a most accomplished officer and throughout his life rendered distinguished service to the hospital. In the affairs of the British Medical Association he always took a warm and active interest. He had been president of the South Wales and Monmouthshire Branch and of the Cardiff Division. He was foremost in the fight against the Insurance Act. A past president, he was a frequent contributor of papers to the Cardiff Medical Society, and until recently took an active interest in its discussions. Hanging on the walls of the society's rooms is a series of photographs illustrating some of Dr. Vachell's pioneer work in the surgery of the thyroid. He was justly regarded by a large circle of patients as a steadfast friend and trusted adviser. The wide range of his interests was very notable. His leading characteristics were an unbounded and infective enthusiasm—inexhaustible capacity for work—great kindness, sympathy, and generosity. He was a man of strong personality and striking presence. His was essentially a full life. His skilful, devoted, and kindly services to the poor, his readiness at all times to help his colleagues with his wise counsel, and his unswerving loyalty will always be remembered with affection and esteem."

Dr. Vachell married, in 1877, Winifred, daughter of the Rev. J. W. Evans, rector of Cossey, who, with one son and two daughters, survives him. His brother, Dr. Herbert R. Vachell, is also a well-known Cardiff practitioner and a member of the consulting staff of the King Edward VII. Hospital.

SEVENTH INTERNATIONAL CONGRESS FOR OBSTETRICS AND GYNÆCOLOGY.—This congress will meet in New York from Sept. 13th to 17th, 1915, under the presidency of Dr. J. Riddle Goffe, of New York. An executive committee has been appointed for each country that has hitherto participated actively in the proceedings of the several congresses to select reporters on the fixed subjects, and to recommend to the programme committee the names of other suitable persons to represent their respective countries. There will be one scientific session each day, from 9 A.M. to 1 P.M. The afternoons will be devoted to clinics, sightseeing, excursions, &c. The scientific programme will include: The Remote Results of Operations for the Relief of Retro-displacements of the Uterus, both Simple and Complicated; reporter, Professor Th. H. Van der Velde, Haarlem, Holland. The Treatment of Puerperal Infections; reporter, Dr. Edward P. Davis, Philadelphia, Pa., U.S.A. The Value of Radio-activity in Gynæcological Therapeutics by (1) Roentgen Ray, (2) Radium, and (3) Mesothorium may be discussed in individual papers or in the form of reports. Friday, Sept. 17th, Miscellaneous Papers. National societies are invited to discuss these subjects at least eight months before the meeting of the congress, and to have reporters collect and digest these discussions and report their conclusions.

Correspondence.

"Audi alteram partem."

MINERS' PHTHISIS ON THE RAND.

To the Editor of THE LANCET.

SIR,—THE LANCET of April 11th contains two contributions by Mr. B. G. Brock and Mr. J. L. Aymard on the Miners' Phthisis question.

I am taking the liberty of examining some of their arguments as I feel sure that an absolutely impartial statement would be of interest to those who have read Mr. Aymard's effusion. My impartiality can be judged from the following. I have worked on the mines of the Rand for a period just exceeding three years, and have now given up mining owing to silicosis, and consequently am, according to Mr. Aymard, one of the victims sacrificed to Mammon by its High Priests, the Chamber of Mines. I have no money invested in the mines, and am not working for any of the mining houses, and I am not employed, nor do I so desire to be, by any of the benefit societies or unions, which being of strong labour sympathies can be said to represent Mr. Aymard's side of the question.

To take his letter seriatim. His first paragraph, I think, can be more or less ignored. When a man says that his "statements have never been proved incorrect," and that his "opponents are cursed with" "damnable political insincerity," I think, Sir, any fair-minded man understands that it is a political manifesto and not a scientific treatise that he is reading. In his next paragraph he first attacks "commission after commission" as "being packed with incompetent persons." Who is Mr. Aymard that he should set himself up as a judge of mining or medical experts? He then clinches his argument by saying that 2000 less men are employed to-day than in 1911. Let him be honest and say if this is really due to phthisis. I think any of the hundreds who are to-day walking the reef looking for work would be quite willing to convince Mr. Aymard that this shortage is the result of the late strikes and not of silicosis. A little further down, in relation to the deadly dust, Mr. Aymard, referring to the process of "collaring a hole," states that during this process "more frequently than not no water is used." In a later paragraph he again indulges in a little hyperbole at the expense of the mining houses, because, according to him, they are placing no limit on the number of machines a competent miner supervises. Now anyone who has had any experience of mining will agree that it is a very rare thing for a miner to allow anybody but himself to supervise the direction of a hole. The reason for this is that in driving, for example, a hole started ¼ in. away from its proper place may easily spoil the whole day's work. This is the period when Mr. Aymard says no water is used.

The following observations on this water question may be of interest. A shift boss is bound by law to report any breach of regulations, the most stringent of these regulations being those with reference to prevention of phthisis. Now compare the treatment a shift boss gets from the management and from the men in this respect. The management generally employs a man who is known as manager's assistant, or some such title, whose main duties are to pay surprise visits. If he finds a man not using water

when drilling his first question is, "Has your shift boss been here?" If the answer is in the affirmative the shift boss will be reported to the manager, and probably fined if not "fired." Now as to the men who are continually complaining about the "callous, inefficient administration," to quote from Mr. Brock, I can confidently affirm that out of an average of nine developers I had on my section when shift bossing, only two made proper use of the water the mine supplied. The reason they did not use the water is because they are willing to risk their own lives, and what they do not consider, the lives of the kaffirs working for them, and also of all persons in the direct air current from them, rather than get soaked through and run the chance of pneumonia. It was impossible to get evidence to convict as they generally place a boy—i.e., kaffir—to watch for the approach of any of the staff. My authority for these two statements is that I have been told by the men themselves that they do this.

I think I have shown so far that it is more owing to the men's abuse of precautions than to the management's lack of precautions that phthisis is still prevalent. Mr. Aymard's remark *re* breakdowns due to too great a pressure of water is so idiotic that I wonder he had the temerity to try to bluff so obviously. In fact, it is the rarest thing in the world to find a man working on machines who does not give as his excuse for not using water that "there is not enough pressure." To obviate this the Mines Department brought out the amended regulations, 1913, to compel the miners to have a pressure of water *over* a fixed minimum of 30 lb. to the square inch. I think this shows that it is not due to the use of water, but to its neglect by the men that this scourge is still prevalent. Owing to the fact that Mr. Aymard's advice *re* an expert on silicosis was not followed by the mining houses he asserts that the rule of these houses is that "no experts wanted from oversea except when required for political purposes." This is another example of the political manifesto. Can he answer for what political purpose did the houses bring out, at the expense of the mining industry, Sir Almroth Wright and Surgeon-General Gorgas, who, Mr. Aymard has said, "did not study the phthisis question properly." Your readers, Sir, can appreciate the fact that when men of their standing, with their staffs, are brought out, necessarily at great expense, defrayed entirely by the mining industry, Mr. Aymard's advice is not likely to be taken, or paid for.

In his paragraph referring to Mr. Moynihan's discoveries, he cheerfully states "that the question at what depth this," meaning the introduction of steam, "would be impracticable, if at all, remains to be seen." In the interview he states: "After blasting, a mine could easily, and comparatively cheaply, be filled with steam." What sublime confidence! Mr. Aymard ought to know that the upper levels of most of the mines are very nearly "worked out." The greater part of the work is now carried on from 2000 ft. to 4000 ft. below the surface, and development from 3000 ft. downwards. I leave it to your readers to ask any competent engineer for an estimate for conveying steam 3000 ft. down a wet shaft, then bringing it along drives at a temperature of, perhaps, 80° for a distance of half a mile, or may be more, and then discharging it at such a temperature that it will fill the mine *as steam!*

I would suggest that if any of your readers feel interested in this scheme they then look at the monthly reports of these mines and see how many mines would become unpayable if this experiment were tried. Then think of the number of unemployed there would be left. I refer to this steam idea as an experiment. Though Mr. Aymard is quite convinced that the mining houses are only using water in preference to steam through "false economy," he seems to have forgotten the furious tirades he favoured us with during the last few years on the false economy of not using *water*. The mineowners followed his advice as he then gave it, and in THE LANCET of April 11th of this year you can see the manner in which he shows his gratitude.

Now, Sir, as to the remedy. I give my ideas, as I consider that any person may be the lucky person to hit on the right solution. The only hope I see is to make it an offence for anyone not to use water, and on a second offence to remove the offender's blasting ticket. This would of course mean a large reduction in the number of competent miners employed. This could be effected by the system of well-paid sectional shift bosses in charge of a number of working places. Under these you could have men placed on day's pay in charge of each place. These men would be responsible to the shift boss that work was carried out as he ordered; the shift boss to be solely reponsible for blasting. This would remove what I consider the curse of the present system—viz., a miner earning, say, from £40 to £150 per month being under the charge of a shift boss who is paid often as low as £30 per month. What a chance for bribery! As a general working rule I would suggest that the shift boss should be paid sufficiently to resist all temptation to bribery, and the man paid low enough to prevent his being able to afford in comfort to pay bribes or fines for not using water.

In my opinion it would also help if the compensation for first stage were materially increased, and that for third stage phthisis diminished to prevent what is often done now, an unfortunate sufferer "hanging on" till he gets the fatal stages, so as to leave more money to his family. It may be impossible to carry out these suggestions, and the advantages of them may be illusory. I hesitate to express a definite opinion in the face of the experts whom the mining industry are so continually consulting, as I feel that if I did I would only be adding myself to the category of the fools who rush in where angels fear to tread.

I am, Sir, yours faithfully,

PHILIP H. FRANKS, B.Sc. (Mining) Birm.

Johannesburg, May 11th, 1914.

THE PLEA FOR IMMEDIATE OPERATION IN APPENDICITIS.

To the Editor of THE LANCET.

SIR,—Will you permit me to write a few lines in reply to Mr. Edmund Owen's letter in THE LANCET of June 27th? I have said in a former letter that a surgeon can frequently give a correct opinion as to the pathological state of an appendix before its removal in an acute attack of appendicitis from a consideration of the history, symptoms, and local examination of a patient. Mr. Owen denied this. In a second letter I gave notes of cases in which this had been done. It does not assist to call this guess work; the cases to which others could be added represent facts, and it is not possible to ignore them. I do

not claim any special skill in this matter; few surgeons are satisfied with the simple performance of the operation in an acute abdominal case. They do not refuse to do the operation because of any doubt which they may have as to the exact cause of the symptoms of urgency. They recognise that early operation is necessary, endeavour to form an opinion before doing it, and make careful notes of everything found in order to compare it with other cases and see why there was a difficulty in making the diagnosis in any particular case. It is not enough at the present day to record in an acute appendix attack that the appendix was "gangrenous." We want to know whether the gangrene was local or affected the whole of the appendix. We also want information as to the probable cause of the gangrene, whether this was secondary to a concretion, took place beyond a stricture as a result of over distension, the position of this stricture, &c. The state of the omentum and surrounding peritoneum, with the character of any exudation, must also be noted. It is not possible for anyone frequently engaged in this branch of surgery to fail to advance in his knowledge of the subject if he tries to work in this way. I think it is the right way in which to proceed, although Mr. Owen does not appear to regard such an attempt as likely to prove of practical use. The custom of "waiting to see" until the veil is lifted is not satisfactory either in politics or in surgery for the ultimate good of the nation. I have not contended that anyone can state the exact condition of the appendix in every case; indeed, I have given evidence to the contrary. My point is that the surgeon can tell in many patients, and I have no doubt the number of these will increase. I have shown that a correct diagnosis of the state of the appendix has a practical value to the individual. The story of the racing man who placed three horses in their correct order before a race has no bearing on the question, and I cannot agree that it is all a game of chance.

I am, Sir, yours faithfully,

July 3rd, 1914. WILLIAM H. BATTLE.

To the Editor of THE LANCET.

SIR,—In view of the recent correspondence in your columns the following case seems to me worth recording, as it shows so plainly the impossibility of differentiating between mild and grave conditions of the appendix, and the danger of delay.

A boy, aged 12, was brought on July 4th at 8 P.M. He had been running about as usual, but had complained of occasional abdominal pains, so his mother thought she had better bring him. The boy was thin and looked badly nourished. The temperature and pulse were normal, and he said he had no pain. The abdominal wall was loose and flaccid; no sign of muscles being *en garde;* no increased resistance; no tender point. The appendix could be easily palpated through the lax abdominal wall; it felt hard and large, but was not tender to light pressure or rolling. When pressed firmly it gave a slight shooting pain to left hypochondrium. I operated the next day, and up to the time of operation the condition was unchanged. The pelvis contained a large amount of free clear fluid. The appendix was congested on the outside and hard with an old adhesion from the mesо to the iliac floor. Inside the appendix was tightly strictured at its proximal end, and was full of pus. At the distal end was a piece of iron wire curved with sharp ends, one of which had nearly penetrated the peritoneum, the distance between the two points being three-eighths of an inch.

I had no suspicion that there was serious mischief in this case, and cannot see how anyone could have diagnosed it.—I am, Sir, yours faithfully,

Watford, July 7th, 1914. J. C. BARKER.

THE SURPLUS FUNDS IN LONDON.

To the Editor of THE LANCET.

SIR,—If the Botha-like way in which the Caxton Hall meeting of last week was conducted is a sample of the methods of the new organisation which promoted it, it augurs ill for its future. For a chairman—not named in the notices calling the meeting and not elected by it—to announce that *he* is not going to allow amendments to the resolution he and his friends have drafted is as alien to the true spirit of trade unionism, which was invoked, as anything one can imagine. That my amendment, previously communicated to him, which embodied everything of moment in the resolution, but suggested arbitration as the most practical solution of the difficulties of money allocation, was, after a preconcocted show of fair play, despotically ruled "out of order" was the plainest proof that the men who are contending for a *pro rata* distribution have no confidence in the justice of their own claims. For the greatest number of the men on the London panel are men with small lists. Why on earth they should allow themselves to be led blindfold by the big-list men who, while pretending to speak for the whole body, openly announce their intention, if they can procure such a division of the "surplus," of pocketing the greater part of it themselves, passes my comprehension. Such a division means actual ruin to many a small-list man. Dr. Angus was allowed to speak in favour of a *pro rata* division; I was instantly forbidden even to allude to its unfairness. So "fair play and no favour" is *not* to be the motto of the new organisation. We small-list men have our contract rights if we will but be wise enough to stick to them. For 1913 the right of proceeding against the London Insurance Committee for breach of contract expires on the 11th inst. by the provisions of the Public Authorities' Protection Act of 1893. I have therefore, after patiently waiting to the last moment for the London Insurance Committee to do justice, commenced legal proceedings, which I shall certainly not drop unless some proposal as equitable as the one which my amendment suggested is accepted by the Government and carried into speedy execution.

The Commissioners, it appears, are now stultifying their own consents to other schemes by laying it down "on legal advice" that nothing but a *pro rata* distribution is allowable under the Regulations. The proposition that one clause in a set of regulations can be intended and made to govern a state of things wholly created by the violation of previous clauses of the same regulations is the "tallest" substitute for a legal argument that I have yet met with, and the legal "light" that evolved it, whoever he be, ought to return to school. Besides this, the subsections relied on refer to a doctor's "list" which has, to comply with the Regulations, to be made *after* assignment and to include assigned persons. No legal doctor's "list" therefore exists in London, which again prevents the application of these clauses to the existing facts. If any attempt is made to apply these clauses to the distribution of the "surplus" it can be easily stopped by an appeal

to the courts for an injunction, which I should at once make. Nothing but fresh legislation, such as submitting the whole question to arbitration, can solve the problem.—I am, Sir, yours faithfully,

Paddington Green, W., July 6th, 1914. H. BAZETT.

THE NATIONAL MEDICAL UNION.

To the Editor of THE LANCET.

SIR,—You will excuse my trespassing upon your time and space, but on reading Mr. E. H. Worth's letter in your issue of July 4th I notice that he has misquoted the principal resolution passed at the general meeting on June 27th. As chairman on that occasion I feel it my duty to give the resolution in full as passed with only four dissentients. It is as follows:—

Resolved: That refusal of service in any capacity under the National Insurance Acts, 1911 and 1913 be a condition of membership of the National Medical Union. Nothing in this resolution shall prevent any member of the National Medical Union from signing certificates to enable insured persons to obtain sanatorium and sickness benefits under the National Insurance Acts in his private professional capacity.

May I congratulate Mr. Worth on his generous offer to the guarantee fund? He is not alone in his enthusiasm, and I can assure him that the National Medical Union stands to become a power in the land.

Hoping that many non-panel readers of your valuable paper will respond to his very forcible appeal for their support to the National Medical Union, I am, Sir, yours faithfully,

VIVIAN T. GREENYER.

"Edzell," New Church-road, Hove, July 6th, 1914.

To the Editor of THE LANCET.

SIR,—I read with much pleasure Mr. Worth's letter in your issue of July 4th, and I desire to add my appeal to his and urge all non-panel men to join the National Medical Union, and thereby assist to uphold the best traditions of the profession. The fight, deplorable though the sequel has been, is by no means over, and there may yet be critical times ahead. Surely, then, it is the duty of every man who from principle has not joined a panel to take some part in the work of the National Medical Union, and surely, also, support may reasonably be expected from the consultant branches of the profession, and especially from those who, as teachers in the medical schools, can influence future practitioners.

I shall be glad to join Mr. Worth in increasing my guarantee to a similar extent, and I have no doubt many others will do the same. There are 15,000 non-panel men in the country, and it should be easily possible to make the National Medical Union a most powerful association.

I am, Sir, yours faithfully,

Huddersfield, July 7th, 1914. W. L. W. MARSHALL.

THE NORWICH MEDICAL INSTITUTE.

To the Editor of THE LANCET.

SIR,—I have read with considerable pleasure the remarks of your Commissioner in THE LANCET of July 4th (p. 51), on the work of the Norwich Medical Institute, of which I am one of the medical officers. I am sorry not to have had an opportunity of meeting your Commissioner during his visit to Norwich, when I think I could have shown even more conclusively that institutional practice gives opportunities for good work to be carried on.

I have only one criticism to offer of your otherwise fair summary, and it is on the question of sweating. I do not know what dictionary your Commissioner uses, but mine defines sweating as "the practice of employing poor people at starvation wages." I must therefore beg to differ from him as to the strict meaning of the word "sweating." But apart from this verbal quibble your Commissioner—quite unintentionally I willingly believe—proceeds to convey the impression that this institute, like some others, makes a profit for other purposes out of moneys paid for medical services. Such is not the case, and has never been the case for many years before the coming of the Insurance Act—certainly not within the seven years of my association with the institute. With the exception of a small balance carried over from year to year the whole of the income has been absorbed by the medical needs of the members, with the single exception of an insignificant sum—quoting from memory I think about £12 per annum—paid to the Medical Alliance (a body formed to guard the interests of institutes generally) in subscriptions and expenses of delegates to an annual conference extending over two days. For years the lay members of the board of delegates and management committee have not received a farthing for their services. They are now, since the Insurance Act came, paid a small fee for each attendance, which payment has been sanctioned by the Insurance Commissioners as reasonable.

There have been two other payments to which the local division of the British Medical Association has taken exception, though they are both in a sense medical payments. One is a subscription of 5 guineas annually to a convalescent home, and the other is the payment of consultation fees when recommended by us, the medical officers, in cases requiring special advice which could not be obtained at the hospital, and for which the particular patients were too poor to pay. But though the British Medical Association has denounced these payments certain medical men, who would not meet us in consultation, have not been above taking these fees, though well knowing that the institute paid them. I should add that these consultation fees have not averaged more than 12 guineas a year for several years.

I quite fail to see how these payments can be called making a profit out of our service. Why, Sir, so far from wishing to "sweat" us in this way our committee has, owing to delay in payment by the Local Insurance Committee, borrowed money last year rather than ask us to accept a penny less than the percentage to which we were entitled by our agreement with them. They might with fairness have asked us to share the risk and the delay, but they took the whole burden themselves. I speak of lay management as I find it.

I am, Sir, yours faithfully,

Norwich, July 4th, 1914. ARTHUR H. PRIESTLEY.

VITAMINES AND AN UNUSUAL CASE OF SCURVY.

To the Editor of THE LANCET.

SIR,—As your readers at the present time seem to be interested in vitamines, perhaps the following case of "scurvy" may be of interest.

Mr. X., aged 23, came to the Malay Peninsula to plant rubber. He had eaten nothing but porridge, bread (white) and butter, and milk since the age of 3 years. He had always been very fit and well, was of good physique, and had had some success at football, cricket, &c. Four months

after arrival in the Federated Malay States subtertian malaria set in, and six months after arrival he went into the European hospital of the State, complaining of swelling of the left leg and a large "bruise." There was no history of injury and he was discharged in 11 days. A fortnight after his discharge from hospital a second attack of malaria was experienced. Ten months after his arrival in this country he had a third attack of malaria. Then one month after this he returned to the European hospital, as his right leg went "black" and was swollen and painful. There was no history of injury. A diagnosis of scurvy was made. As the patient had nausea at the sight of soup, meat, &c., and vomited if he tried to eat them, he drank lime squashes. He then came under my care, with a view to his being sent home. The patient was bronzed, but had lost 1½ st. in weight lately. The right leg was still swollen and discoloured about the ankle. Pressure on the tibia was very painful. The heart, chest, &c., were clear. Hæmoglobin, 70 per cent. (Tallquist). No parasites in blood. Red blood corpuscles, 3,800,000; white blood corpuscles, 25,000. Urine and fæces, normal.

The patient lived with me for over a week, and as I had no porridge prepared he had to eat "at" whatever was going, and soon could take soup, potatoes, rice pudding, and very little green vegetables and a banana. He quickly improved and was sent to another estate, where there is a resident doctor. He did light work, but soon made porridge his chief article of diet again. In a month he had his fourth attack of subtertian malaria and returned to my care. Hæmoglobin, 65 per cent.; red blood corpuscles, 3,200,000; white blood corpuscles, 25,000. Having scratched a mosquito bite his right leg quickly swelled up and became septic, and when this had healed he returned to England.

This case has two or three points of interest. 1. A man living on practically nothing but porridge without any apparent cause. 2. Scurvy amongst Europeans is extremely rare in the Federated Malay States. I can hear of no other case. 3. The fact that he kept fairly fit so long. I take it that he would probably never have got "scurvy" if he had been able to obtain fresh milk. Fresh milk is very hard to obtain here, and when one has once seen a cow milked one feels much happier with the tinned variety. Also, brown bread is difficult to obtain and does not seem to be made to any extent by the native bakers.—I am, Sir, yours faithfully,

Kuala Lumpur, F.M.S. R. McC. LINNELL.

THE COUNCIL ELECTION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—May I through the medium of your columns thank those gentlemen who voted for me in the recent election to the College Council? At the same time, I would like to take this opportunity to make it distinctly understood that I dissociate myself entirely from the very undiplomatic letter to which Mr. Percy Dunn takes exception in your issue of July 4th. His complaint as to its tone is very justifiable, and its terms are calculated to alienate the cause of the Members and to put back the realisation of their claims.

When I seek election next year I shall reply to the questions sent me with this experience well in memory. I am, Sir, yours faithfully,

MACLEOD YEARSLEY.

Queen Anne-street, W., July 7th, 1914.

THE BACTERIOLOGICAL EXAMINATION OF MILK.

To the Editor of THE LANCET.

SIR,—I am glad that a distinguished bacteriologist in the person of Professor R. T. Hewlett has come forward to point out in your issue of July 4th (p. 44) the fallacies inherent in the quantitative enumeration of bacteria in milk.

At the Infants Hospital, Vincent-square, S.W., the milk coming from the hospital farm and from other sources is examined daily, and I have long been of the opinion that the bacterial count method is of little value. Especially is this so when milks are examined in different laboratories and the results are compared. The difference in the precise method and in the media employed (even the slight differences in the preparation by competent persons of the same medium), and many other factors, result in all kinds of serious error. Of the greatest importance is the fact that the milk with the higher count may be a much better milk than that with the lower. Thus, we find that A contains 55,000 bacteria per c.c., while B only contains 14,000. But when we come to our observations in regard to (1) time of curdling at 19° C. and 38° C.; (2) development of acidity at 38° C., (3) character of curd formation—gas production or otherwise, (4) nature of bacteria developing in the milk at 19° C. and 38° C., we find that A is a much better milk than B, for the changes in A compare more closely with the changes occurring in a milk taken directly from the cow under strict precautions than do those in B. One method is of great value—the microscopical examination of the centrifugalised deposit suitably stained. By this method an experienced observer can obtain information of the greatest practical importance. Not only can the number of bacteria be approximately estimated, but important information can be obtained with regard to the nature and probable source of any contamination. Thus, Gram-negative bacilli generally indicate colon organisms and consequently manurial contamination. Dust from dirty fodder can be recognised both by the general débris and by the presence of moulds. The cellular elements in the milk are readily recognised and early warning of mastitis may be forthcoming. An interesting point is that in the case of a contaminated milk the observer is often able to make a prognosis in regard to the behaviour of the milk when submitted to the above-mentioned tests. If this prognosis proves to be correct the case against the milk is a strong one. The great practical value of the method is its rapidity. Within half an hour of the receipt of the milk the examination of the centrifugalised deposit can be completed, and consequently, in the case of any defect in quality, we are able immediately to telephone to the farm, at the same time indicating the probable source of the contamination. It is important that the centrifuge should be of large capacity, so that the samples of milk may be sufficiently ample to be representative, and we have recently installed Professor S. Delépine's centrifuge as with this instrument over 1½ litres can be dealt with at one time, while owing to its

high speed (at 5000 revolutions—over four miles a minute) the usual time of centrifugalisation is much shortened.

I am, Sir, yours faithfully,

Harley-street, W., July 4th, 1914. RALPH VINCENT.

TOUCHING FOR THE KING'S EVIL.

To the Editor of THE LANCET.

SIR,—A second letter upon this subject from Dr. F. Parkes Weber having appeared in your columns on June 27th, may I be excused for taking up my pen at his request in the hope of partially replying to some of the questions put forth by him?

He asks firstly: "Are the old well-cast specimens [of that much-discussed token, *Medallic Illustrations*, Plate xxxiii., 23] to be regarded *all of them* as forgeries of the period for the use of ill-disposed persons to gain fraudulent access to the king?" To this I reply that the wording of the document mentioned by me in my last letter, and which will be published in full in the *British Numismatic Journal*, lies open to a dual interpretation. The passage reads: "Whereas wee are informed by our Serjeant-Chirurgion, that there hath been a great abuse comitted by dissolute and ill-disposed People, who to gaine the Gold only, have counterfeited his tokens, which were cast in a mold made by a Freemason, wherein we have not only been deceaved of many Angells," &c. The grammar, if correct—a doubtful assumption at that period—should mean that the original tokens were cast by the Freemason. Against this is the fact that both struck and cast pieces of the better class exist, but it was no uncommon practice, as we notice in the case of badges and medals of Stuart times, to make one pair of dies, and after striking from them a number of specimens, to multiply these by casting. We might also read the passage as meaning that the Freemason was the forger, but this is immaterial, for fraudulent casts had clearly been made, and some poor examples seem to fit into this category.

Dr. Parkes Weber's second question relates to the fact that we have seen no tokens the size of an angel, and suggests that this condition may have been abandoned. But this I venture to think was unlikely as the change of size would be material in distinguishing the new token from the old, no mention being made of an alteration in design. We might account for the above rarity by the injunction that the tally should be returned to the mintmaster after use, "whereby he may know what number of Angells have bin expended." Naturally under the Commonwealth, "touching" being no longer in vogue, the officials would melt down the metal lying idle. Some pieces, however, should have escaped, being unredeemed, and unless such be found this point must remain "non proven." I am far from suggesting that the other pieces referred to by Dr. Parkes Weber were not made for a similar purpose of admission, but might they not be intended for the coronation or some other ceremony, inasmuch as the legends are less appropriate to "healing" than that of the token which we have discussed?

I did, however, in my lecture in May before the British Numismatic Society go so far as to mention the possibility that the "Soli Deo Gloria" pattern halfpenny—for as such its exact weight induced Mr. Montagu to class it (see Montagu's "Copper Coins of England," p. 41, No. 1)—of the second Charles, might be a ticket of admission to his "touching" séances. It is not very rare and exists in various combinations of metals, a not unlikely precaution to regulate the number of persons coming in successive weeks, for the "healings" under this king were very frequent. Mr. McLachlan suggested that it might be the touchpiece of Charles II.'s exile, and put forth in the *Numismatist* for March, 1912, excellent arguments for this attribution, which we have no documentary evidence to disprove.

Lastly, Dr. Parkes Weber refers to the silver touchpiece in the Wellcome Historical Medical Museum, reading IAC. 8 instead of IAC. 3. This is an example highly interesting to the student, not only from its rarity, but for historical associations, agreeing as it does in other respects with the type used by James Francis Edward during his exile in France, whilst this Scottish title brings to mind the dies, bearing date 1716, engraved for the *King de Jure*, as Jacobus VIII., and intended for the coinage of the northern kingdom, had his second invasion proved successful.

I am, Sir, yours faithfully,

HELEN FARQUHAR.

Belgrave-square, S.W., June 30th, 1914.

To the Editor of THE LANCET.

SIR,—I regret a misstatement in my brief note on the above subject in your last issue. The coin alluded to is *not* the one that caught my attention in the Hodgkin collection: my informant and I misapprehended one another.

I am, Sir, yours faithfully,

London, July 6th, 1914. RAYMOND CRAWFURD.

LATIN FOR MEDICAL STUDENTS.

To the Editor of THE LANCET.

SIR,—I was interested in your annotation on Latin for medical students in THE LANCET of June 27th. I heartily endorse your remark that "the student who has learned Latin will find his examinational career much easier." The fact is, that unless the teaching of classics be so reformed as not to clash with conditions which have vastly altered in the last 25 years, it will have to go. The modern boy can have his interest in Latin awakened if after the necessary grammatical preliminaries he is assisted to read intelligently the more interesting authors. He ought to read far more and do less of putting English into Latin. The master should assist him in class to translate unprepared passages, while he explains all the historical and antiquarian matter necessary to render the author intelligible. Such mysteries as the ethic dative, anacoluthon, and oxymoron are best avoided. The practice of prescribing a set book for an elementary examination is an abomination which London University has done its best to end. Boys who are instructed in class how to tackle passages they have never seen before are bound to get a better grip of Latin than those who work up a set book and notes parrot fashion. Unless the Universities of Oxford and Cambridge can be got to abolish compulsory Greek for those destined for mathematical, medical, or scientific careers the whole fabric of the classics as a valuable educational medium will be crushed under the juggernaut car of modern hustle. Latin verse composition for the average boy is a hideous waste of time, while Greek iambics are something worse. I well remember as a young boy being dragged through Book II. of the Gallic War with

never a glance at the map or a word on field service conditions in the Roman army. The same absence of intelligent teaching doutless lies behind the well-known schoolboy regret that the falling tree did not after all make a slightly better shot for Horace's skull—

. . . prope funeratus
Arboris ictu.

I am, Sir, yours faithfully,

Shadwell, E., June 30th, 1914. ATHOLE ROSS.

THE NATIONAL INSURANCE ACT.

THE REPORT OF THE NATIONAL INSURANCE COMMISSION.

THE report of the Insurance Commissioners dealing with the second year of the working of the National Insurance Act gives the following figures with regard to the number of medical men on the panels. 1913: Jan. 15th, 13,996; April 14th, 15,659; Oct. 13th, 15,870. 1914: May 31st, 16,059. The Approved Societies are stated to have 10,533,220 members, the Friendly Societies accounting for 4,856,584. Of this total industrial insurance companies account for 3,759,396, and trades unions for 1,154,484. The other organisations concerned are collecting societies with 663,659, and employers' provident funds with 99,097 insured persons on their lists.

The portion of the report devoted to estimating the financial position of the Approved Societies will naturally be of considerable interest to those concerned with the practical working of the Act, and particularly to the medical profession, because there has been a tendency among Friendly Societies, whether conscious of financial danger or not, to complain that any excessive expenditure upon sickness benefit has been exclusively caused by laxity on the part of the medical profession. The report of the Commission affords little or no proof that this ascription of blame is correct, so far as any serious responsibility for the financial position of the societies is concerned, although Mr. A. W. Watson (the chief actuary of the Commission) is of opinion that an excess of sickness claims referred to below points to the necessity for increased vigilance on the part of societies and of medical men giving certificates, and further expresses the opinion that it is impossible to doubt that there has been in many quarters too little recognition of the high degree of confidence which Parliament reposed in the medical profession when it decided to withdraw the administration of medical benefit from the Approved Societies, and that a great improvement in certification is both necessary and practicable. The general conclusions which he arrives at with regard to the Approved Societies and the incidence of sickness benefit are summarised as follows:—

1. The sickness claims of men, taken as a whole, have been within the actuarial provision.
2. The sickness claims of women, taken as a whole, have been materially in excess of the actuarial provision.
3. Great variations have arisen between the sickness claims made upon individual societies. While in many cases the claims have exceeded the estimates, there are many other cases in which the cost of the benefits has been so far within the estimates as to lead to the expectation that a large number of societies and branches will be found upon the first valuation to be in possession of surpluses.
4. The sickness claims of both men and women have been, in the case of many societies, above the standard which should normally prevail, and which may be expected to obtain when societies have become experienced in administration.
5. The claims for maternity benefit have varied considerably as between different societies.

It may be pointed out that any conduct of medical men producing an unjustifiable drain upon the resources of Friendly Societies might be expected to affect them generally, rather than to produce variations between the claims made upon individual societies. Also it is evident that financial strain upon the funds of societies is most markedly felt in the case of claims made by women. The existence can hardly be urged seriously of a negligent tendency by medical men on the panel to favour the claims of women to sickness benefit. Mr. Watson refers in particular to the allowance of benefit to pregnant women, and observes that many of those claims have been on the border line of justification, and that nearly all represent demands unknown to the societies which were made before the Act provided for women, and would have been repudiated by them as not within the scope of insurance against sickness.

THE LONDON INSURANCE COMMITTEE AND THE DISTRIBUTION OF THE UNALLOTTED FUNDS.

The London Insurance Committee having been advised by their medical benefit subcommittee either to proceed at once with the distribution of the fund in their hands in respect of unallotted patients, or to express the opinion that the Insurance Commissioners should undertake to distribute it, were asked at a meeting held on June 25th, by Mr. F. Coysh, chairman of the general purposes subcommittee, to distribute the fund immediately. Mr. Coysh's motion to that effect was however displaced by an amendment moved by Mr. Kingsley Wood and eventually carried after discussion, in the course of which medical members of the committee protested strongly against the further delay which would be involved and against departure from the principle of distributing in proportion to the numbers on the lists of the recipients. The amendment thus adopted was "that having regard to the decision of the committee that it is undesirable that any medical man on the London panel should undertake to treat a larger number of insured persons than 2000, the committee is not prepared to distribute the surplus moneys in the panel fund on a *pro ratâ* basis unless and until a legal decision has been obtained or further parliamentary authority has been given."

THE LONDON COUNTY COUNCIL AND THE LONDON INSURANCE COMMITTEE.

The London County Council is entitled to appoint 19 out of the 80 members of the London Insurance Committee and three of its nominees must be medical practitioners. The Council has selected the following as its medical representatives for the year 1914–15: Sir John Collie, Sir Shirley F. Murphy, and Dr. R. M. Beaton.

THE LOCAL GOVERNMENT BOARD AND THE TUBERCULOSIS SCHEME FOR LONDON.

The London County Council has received a letter from the Local Government Board commenting on the scheme for the residential treatment of tuberculosis approved by the Council on May 26th (THE LANCET, May 30th, p. 1559). The Board stated that, in consequence of the refusal of the London County Council to bear any part of the cost of

treating insured persons, it understood that the London Insurance Committee did not propose to arrange for residential accommodation through the County Council. There were clearly many advantages in dealing with insured and uninsured persons by one scheme, and the Board greatly regretted that the County Council had not been prepared, as the councils of other great towns had been, to undertake to provide the accommodation necessary for the whole community, subject to the condition that half the annual cost, after deducting receipts from the Insurance Committee and other sources, would be met out of grants from the Local Government Board. The Board had some doubt whether the proposals of the Council in regard to the selection of cases for residential treatment would prove satisfactory in actual working. While the Board took no exception to the establishment of the proposed honorary advisory board, it considered that the Council, instead of authorising this board to appoint medical referees to examine selected cases for residential treatment, would have been well advised to appoint a clinical tuberculosis officer, whose duties would have included advising the Council in the selection of cases for residential treatment. The proposed system of payment by fee per case the Board did not regard desirable as part of a permanent arrangement. Presumably the number of cases normally referred to the medical referees would only be a small proportion of the whole; otherwise the expenditure for this purpose would be unduly high. The Board, however, would not object to these proposals on the understanding that they were reviewed at the end of 12 months, when, if experience showed them not to be satisfactory or economical, some other machinery for selecting cases could be adopted. It was important that no action should be taken which might debar persons in need of treatment from obtaining it, and if any charge was made it should only be in cases in which there was clear evidence that a contribution towards the cost might be expected. It did not appear to the Board that any obligation could be imposed on medical practitioners who recommended cases for residential treatment to investigate and advise as to the financial circumstances of the patients. Subject to these comments the Board approved generally of the proposals of the Council as regards adults, on the understanding that the provision of beds at present proposed was to be regarded as an instalment only.

The Board is in communication with the Board of Education in regard to the proposals for the treatment of children. It will be necessary for the institutions in which beds are retained by the Council to be approved by the Board for the treatment of tuberculosis if such approval has not already been given.

THE NATIONAL MEDICAL UNION.

The first general meeting of this Union was held in London on June 27th, when the report of the provisional council elected at the conference in November last was dealt with and the permanent officers were appointed. It was decided that the Union should apply for registration under the Companies Act, 1867, without the word "limited" as part of the title, and that the liability of members should be limited by guarantee to £1. Arrangements were made for the immediate election of the permanent council by the federated associations on the basis of one representative for every association of 25 subscribers and under, with an additional member for every 20 additional subscribers, the minimum membership entitling any society to elect a member of council being fixed at 10. The following, among other resolutions, were adopted as the basis of the policy of the Union:—

1. To organise the medical profession to the highest possible degree of efficiency in defence of its freedom and in protection of its economic interests.
2. To render every service possible to non-panel practitioners.
3. To oppose any prospective legislation to include dependants of insured persons participating in the medical benefit of the Acts under the present arrangements.
4. To agitate for repeal of the medical benefit sections of the Insurance Act, or such drastic amendments as would bring these sections into harmony with the principles of freedom on the part of the profession and public.
5. To lay down the principle of unrestricted free choice of doctor in any form of national insurance, to insist upon the unrestricted right of insured persons to make individually their own arrangements in connexion with the Insurance Act, and to insist that no doctor attending such persons be required to sign any contract with the Commissioners or any committee under the Act.
6. To place before the public in any and every way possible the dangers of the Act to public health, and its injustice to doctor and patient alike.
7. To maintain that a Medical Service is necessary for the genuinely necessitous classes of the community, *and for them only*.
8. To preserve an independent attitude with regard to party politics.

Further, it was agreed that the National Medical Union is not opposed to the principle of Health Insurance under such conditions as would conform with the other principles of its policy.

CHARGES FOR MEDICINE SUPPLIED BY MEDICAL MEN.

The Darwen Insurance Committee passed a resolution recently commending the Lancashire Insurance Committee for "proceeding against panel doctors for charging insured persons for medicine." From the discussion on the subject it appeared that the case for the medical men was that insured patients sometimes prefer to pay for medicines made up by their medical attendants to taking a prescription to a druggist who would supply the medicine free of charge. On the other hand, it was stated that the insured person was often not aware that he could take a prescription and get it made up without having to pay for it, and that in some instances patients were being told that the medicine supplied by the druggist would not be the same as that of the medical man. The question what course the medical man should take when asked to supply medicine by a patient who preferred to have it from him was propounded by a medical member of the committee. It seems reasonable that an insured person should have the same freedom in such a case as one uninsured. Naturally any representation of a misleading character ought to be dealt with by an insurance committee with severity adapted to the needs of the individual case.

Mr. Arthur Hopewell-Smith, M.R.C.S. Eng., L.R.C.P. Lond., John Tomes prizeman of the Royal College of Surgeons of England and surgeon and lecturer on dental anatomy and physiology at the Royal Dental Hospital of London, has accepted the professorship of comparative odontology and dental histology, which the University of Pennsylvania at Philadelphia has decided to establish and endow.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the examinations for medical and surgical degrees, held recently, the following were successful :—

FIRST EXAMINATION.

Part I., Chemistry, and Part II., Physics.—E. Goodwin, Emmanuel.
Part III., Elementary Biology.—E. Goodwin, Emmanuel; and S. Riddiough, King's.

SECOND EXAMINATION.

Part I.—A. M. Ahmad, Downing; D. J. Batterham, Caius; D. C. Beaumont and W. H. Blackburn, Christ's; T. A. Butcher, Queens'; P. D. Chapman, Sidney Sussex; R. S. Corbett, Caius; G. P. Crampton, Downing; J. M. Downie, Christ's; A. Drewe, Trinity; J. R. Earp, St. John's; H. W. Eddison, Christ's; R. W. Fawcett, Caius; L. P. L. Firman-Edwards, Trinity; G. A. Fisher, Jesus; R. French, Downing; E. O. Goldsmith, Pembroke; G. A. Goolden, Caius; W. S. Gross, Jesus; E. A. H. Grylls and J. S. La Fontaine, Caius; J. H. Le Brasseur, Pembroke; G. Lyon-Smith, Emmanuel; W. J. MacCombie, H. H. Marten, and C. K. Mowil, Caius; D. M. Muir, Trinity; C. L. Odam, Sidney Sussex; A. Orr-Ewing, Pembroke; R. R. Powell, Emmanuel; I. M. Rattray, D. W. R. Richardson, E. N. Showell Rogers, O. S. Thompson, and G. H. Ward, Caius; C. R. H. Weekes, Trinity; and A. Winfield, Downing.
Part II., Pharmacology and General Pathology.—J. C. Andrews, St. John's; G. L. Attwater, Pembroke; S. L. Bhatia, Peterhouse; A. L. Bodley, Clare; G. A. G. Bonser, St. John's; E. D. Broster, Christ's; M. Chadwick, St. John's; G. D. Compston, Trinity Hall; E. V. de Souza, Downing; A. W. R. Don and E. Donaldson, Trinity; J. R. Harris, Queens'; A. G. Irving, King's; L. W. Jones, Emmanuel; J. B. Leather and F. G. Lescher, Caius; W. H. Marshall, Pembroke; C. G. T. Mosse, Caius; D. F. A. Neilson, Trinity; J. H. Parry, St. John's; C. F. Pedley, Jesus; F. S. L. Piggott, Emmanuel; J. S. Pooley, Trinity; R. A. W. Procter, Clare; W. Raffle, St. John's; C. M. Ryley, Emmanuel; T. S. H. Schäfer, Caius; W. G. A. Schüddekopf, Emmanuel; C. G. Schurr, Caius; H. W. Scott, Clare; B. H. Swift and E. P. W. Wedd, Caius; H. A. Whyte-Venables, Queens'; S. M. Wilcox, Emmanuel; and A. T. Woolward, Caius.

THIRD EXAMINATION.

Part I., Surgery and Midwifery.—S. G. Askey, St. John's; *W. F. Benstead-Smith and E. C. Bradford, Pembroke; F. L. Cassidi, Corpus Christi; G. M. Cowper and K. B. Dickson, Trinity; C. L. Gimblett and C. H. M. Gimlette, Caius; H. Hartridge, King's; J. B. Hunter, St. John's; *C. C. Kerby, Trinity; F. G. Lescher, Caius; *Q. Madge, Emmanuel; R. W. Meller, Trinity; R. K. Merson, Emmanuel; A. B. Pavey-Smith, Clare; *J. W. Pigeon, Christ's; W. B. Purchase, Sidney Sussex; *E. C. Rayner, Caius; G. D. Read, St. John's; J. R. Rees, King's; J. E. Sharp, Caius; A. G. Shera, Emmanuel; *H. A. Smith, H. Selwyn; *R. stansfeld, St. John's; C. R. A. Thacker, Downing; *J. R. A. Todhunter, Caius; and H. G. Wiltshire, Emmanuel.

* In Surgery only, having previously been approved in Midwifery and Diseases of Women.

Part II.—S. G. Askey, St. John's; D. C. G. Ballingall, Emmanuel; H. A. Bell, Jesus; W. G. Bigger and P. R. Boswell, Queens'; E. C. Bradford, Pembroke; H. P. Dawson, Trinity; E. L. Dobson, King's; A. T. Edwards, St. John's; W. B. Gordon, Clare; H. Hartridge, King's; F. G. Lescher, Caius; R. W. Meller, Trinity; A. B. Pavey-Smith, Clare; D. V. Pickering, Emmanuel; S. G. Platts, Caius; L. C. Rivett, L. B. S. Sharp, and A. C. S. Smith, Trinity; P. Stocks, King's; and C. R. A. Thacker, Downing.

UNIVERSITY OF LIVERPOOL.—The degree of M.D. has been conferred upon the following :—

J. Bamforth, H. M. Berry, W. E. Cooke, I. C. Edwards, H. W. Jones, R. Kennon, H. Nield, H. Pierce, and G. F. R. Smith.

At examinations held recently the following candidates were successful :—

DEGREES OF M.B. AND CH.B.

Final Examination.—Part I.: H. Garas, A. G. M'Coll, H. C. Roberts, and J. Rumjahn. Part II.: Ruth I. Bateman, R. L. Blenkhorn, C. P. Brentnall, G. S. Graham, J. P. Johnson, R. J. Minnitt, L. Oldershaw, and C. G. Skinner. Part III.: G. D. Harding, R. Martlew, A. G. N. Misbah, R. Rimmer, R. E. Roberts, L. B. Stott, A. W. Weston, and J. St. G. Wilson.
Honours.—First Class: Ethel Chadwick. Second Class: G. H. Darlington and G. H. Pearson.
Second Examination.—Part A: A. L. Davies, D. C. Grundy, and Edna E. Mawson. Part B: N. J. Allan, M. Azer, A. G. Brett, A. J. B. Griffin, Amy Hodgson, R. Nixon, S. Pool, A. M'K. Reid, and E. S. Stubbs.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful :—

FINAL M.B. AND CH.B. EXAMINATION.

*Lily Allan, Basil Browning, Frank Chadwick, J. W. Craw, H. C. Duffy, C. W. Fort, *†‡O. T. Harris, J. R. Jagger, *O. M. de Jong, E. A. Linell, Kate K. May, A. S. Paterson, ‡J. R. B. Russell, J. R. Slack, and E. H. Walker.
Obstetrics.—G. B. Horrocks, Kamil Maximus, and H. A. Sandiford.
Medicine.—W. S. Booth, G. B. Horrocks, and Kamil Maximus.
Surgery.—G. B. Horrocks.
Forensic Medicine and Toxicology.—J. C. Bramwell, A. T. Gibb (distinction), Edgar Granger, William Halliwell, J. G. McKinlay (distinction), H. M. von Mengershausen, J. F. C. O'Meara, F. G. Prestwich, John Rigby, C. G. Todd, Frank Vause, Louis Walton, and Richard Willan.

* Second class honours. † Distinction in Obstetrics.
‡ Distinction in Surgery.

THIRD M.B. AND CH.B. EXAMINATION.

Pharmacology and Therapeutics and Hygiene.—G. S. Bate, H. W. Bennett, Hitchon Chadwick, William Christopher, Richard Colley, Eva L. Glasier, Alice M. A. Holt, R. L. Newell, F. C. Ormerod, J. A. Panton, Nesta H. Perry, Dorothy Potts, C. R. Sandiford, and Walter Stansfield.
Pharmacology and Therapeutics.—J. H. Albinson.
Hygiene.—J. D. Byrd.

FIRST M.B. AND CH.B. EXAMINATION.

Part III. (Organic Chemistry and Biochemistry).—Nooman Abdoh, T. H. Almond, May Ashburner, Sybil Bailey, Mary G. Cardwell, H. J. Chronnell, Thomas Colley, S. E. Critchley, Elizabeth C. Davies, Herbert Dickie, E. B. A. Edleston, Percival Fildes, G. H. W. Gough, F. L. Heap, F. S. Horrocks, Fahim Isaac, A. W. Kirkham, J. H. Lees, John Mills, Terence O'Brien, Kathleen O'Donnell, Ellis Pigott, H. J. Porter, A. R. Redfern, Lazarus Samuels, A. G. Saunders, L. J. Schwartz, V. T. Smith, J. T. Walker, Marie Wardman, and Ethel D. Willis.

FINAL B.D.S. EXAMINATION.

H. H. Stones (First-class honours), and M. C. Paterson (Second-class honours).

DIPLOMA IN DENTISTRY. (FINAL EXAMINATION.)

E. D. Batty, Benjamin Brown, E. W. Fish, F. F. H. E. Kolligs, Frank Lyth, G. N. Scotts, R. S. Smith, and Aquila Whitehead.
Pathology.—T. B. Place.
Systematic Surgery.—John Smith and J. V. Wilkinson.
Dental Prosthetics and Operative Dentistry.—T. B. Place and John Smith.
Dental Surgery.—J. V. Wilkinson.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At examinations held recently the following candidates were successful :—

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Elementary Anatomy and Biology, Chemistry and Physics.—First Class Honours: William Edward Mandall Wardill, College of Medicine, Newcastle-upon-Tyne. Pass List: Montague William Augustus Sandoe, Guy's Hospital; and Habib Toma, College of Medicine, Newcastle-upon-Tyne.
Chemistry and Physics.—John Neville Alexander, Alan Angus, Douglas George Patrick Bell, Edgar Frederick Herbert Bell, John Arthur Gardner Brewis, and Ernest Dewar Charles, College of Medicine, Newcastle-upon-Tyne; Harold Charles Clifford-Smith, Charing Cross Hospital; Wallace Alexander Freeman, Giles Arthur Michael Hall, Alexander Thomas Harrison, and Mary Kathleen Henegan, College of Medicine, Newcastle-upon-Tyne; Reginald Arthur Hickley, St. Mary's Hospital; and George Eric Hyden, William Arthur Jaques, Robert Turnbull Easton Nalsmith, Charles Burton Phillips, Gainsford Reed, Frank Wesley Sopwith, and Louis William Studdy, College of Medicine, Newcastle-upon-Tyne.
Elementary Anatomy and Biology.—Ewart Gordon Anderson, London Hospital, and College of Medicine, Newcastle-upon-Tyne; and Ibrahim Girgis, Samuel Elijah Goulstine, Hamed Kamel, Robert Graham Melrose, George Galloway Robertson, Thomas Wilfrid Robertson, George Howard Shanley, and Arthur Wilfred Wilkinson, College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF DUBLIN.—The following degrees have been conferred :—

M.D.—H. R. M. Ferguson, E. S. Johnson, C. O'Brien, R. O. Smyth, R. E. Tottenham, and H. L. W. Woodroffe.
M.B., B.Ch., B.A.O.—T. W. Allen, J. N. Armstrong, C. D. M. Buckley, J. G. Butt, J. C. A. Dowse, J. S. English, H. R. Ford, N. H. H. Haskins, Rev. R. E. Lavy, T. A. Lawder, H. C. D. Miller, J. D. Oliver, T. D. Power, F. A. Roddy, W. A. Ryan, W. O. Tobias, W. R. L. Waters, and G. H. Wood.

The following licences have been granted :—

L.M., L.Ch., L.A.O.—E. Evans and J. H. Fletcher.

BRISTOL GENERAL HOSPITAL.—The new wing which has been recently added to this hospital will be formally opened on July 27th by Mr. G. A. Wills, the president of the institution.

Alderman Edward Louis McSheehy, M.D., who was Mayor of Wimbledon for two years and is a justice of the peace for the county of Surrey, was presented on July 4th with the freedom of the borough of Wimbledon.

DONATIONS AND BEQUESTS.—The late Miss Ida Freund, of Cambridge, late staff lecturer in chemistry at Newnham College, has left among other large bequests £2000 to Addenbrooke's Hospital, Cambridge.—By the will of the late Mrs. Alice Eliza Davies, of Bury, widow of Dr. Clifford Davies, the testatrix left £500 each to the Robinson Kay branch of the Hospital for Incurables (Manchester), the Bury Infirmary Hospital, and the National Society for the Prevention of Cruelty to Children, Bury.—Mr. William Hough Hey, of Sherburn in Elmet, Yorks, has bequeathed by will £1000 to the Leeds Infirmary and £500 to the National Society for the Prevention of Cruelty to Animals.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ELECTION OF MEMBERS OF COUNCIL.—A meeting of Fellows was held on July 2nd to elect five members of Council. 1042 Fellows voted, 1028 of these by post and only six personally. Three of the votes were invalid; two because the signatures of the voters had not been witnessed, and one because the voter had voted for six of the candidates in place of five. Eight voting papers arrived after 3 o'clock, so that they could not be included in the voting. The result of the voting was as follows:—

	Votes.	Plumpers.
William Thorburn	534	53
Charles Alfred Ballance	434	5
William McAdam Eccles	351	23
James Stanley Newton Boyd	337	14
Charles Ryall	304	13
John Bowring Lawford	256	5
Thomas Horrocks Openshaw	245	30
Walter George Spencer	238	2
Raymond Johnson	218	7
Frédéric Francois Burghard	204	4
Francis James Steward	177	25
Herbert Stringfellow Pendlebury	106	9
Thomas Herbert Kellock	99	0
Percival Macleod Yearsley	90	2

Mr. Ballance was declared re-elected, and Mr. Thorburn, Mr. Eccles, Mr. Boyd, and Mr. Ryall were declared elected members of the Council.

UNIVERSITY OF OXFORD: THEODORE WILLIAMS SCHOLARSHIPS.—The Theodore Williams Scholarship in Anatomy has been awarded to Kenneth F. D. Waters, scholar of Keble, and the Theodore Williams Scholarship in Pathology to Henry St. H. Vertue, B.A., University College; *proxime accessit*, Christopher J. A. Buckell, B.A., Corpus Christi College.

Mr. Thomas Chetwood, M.B. Lond., D.P.H. Oxford, has been appointed school medical officer and deputy medical officer of health for the city of Sheffield in the place of Dr. Ralph P. Williams, who recently resigned these posts to take up his duties as a senior assistant medical officer at the Board of Education. Mr. Chetwood was previously senior assistant school medical officer in Sheffield.

UNIVERSITY OF LONDON.—The Senate at its last meeting reappointed Sir Wilmot Herringham, M.D., Vice-Chancellor of the University for the year 1914–15. The following medical members of the Senate were appointed to the three statutory committees for the ensuing year. Academic Council: the Vice-Chancellor, Mr. H. L. Eason, Professor A. D. Waller, and Mr. H. J. Waring; Council for External Students: the Vice-Chancellor, Sir Thomas Barlow, Sir William Collins, Sir Thomas Crosby, Dr. E. G. Graham Little, Dr. Frederick Taylor, Mr. Waring, and Dr. S. Russell Wells; Board to Promote the Extension of University Teaching: the Vice-Chancellor, Sir Thomas Crosby, Dr. Graham Little, and Dr. Russell Wells. Sir Alfred Pearce Gould was elected chairman of the Graham legacy committee, and Dr. Frederick Taylor chairman of the committee of medical members of the Senate. Dr. R. H. Cole was re-appointed governor of Slough Secondary School.

DENTAL TEACHING AT LEEDS UNIVERSITY.—The dental department of Leeds University was established in 1905 to provide training for students in the modern applications of dental surgery, and to afford facilities for expert dental treatment to those financially unable to obtain it. The public of Leeds are indebted to the governing body of the dispensary for recognising the importance of this work and giving accommodation and other facilities for it in their buildings. Generous subscriptions of dentists and others made it possible to equip this dental department with up-to-date appliances. During the year 1912–13 3237 new patients were treated in the department, and over 14,000 operations were performed or completed; the number of students in attendance was 27. But the present accommodation will not long be adequate, and Leeds will probably soon have to establish a school of dentistry in its own buildings. The staff consists of 12 honorary dental surgeons, with a demonstrator, a house surgeon, a curator, a nurse, and a clerk. The honorary dental surgeons form a clinical dental committee, the chairman of the dispensary board being *ex officio* a member. The department has been self-supporting throughout, and has never become a charge on the dispensary. A scheme submitted by the dental surgeons and approved by the dispensary board has now been adopted by the council of the University, and will come into operation at the beginning of next session, under which the instruction in the dental department will pass under the control of the University and will have the status of University teaching. The honorary dental surgeons will become members of the staff of the University under the title of "clinical dental lecturers," and all future appointments to these lectureships will be made by the University council, and the dental committee will take its place among the academic bodies of the University.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Death of Mr. Chamberlain.

UNIVERSAL regret at the death of Mr. JOSEPH CHAMBERLAIN is felt at Westminster. For some years illness has withdrawn him from participation in the work of the House of Commons, and time has softened the feelings of asperity which are apt to be generated in keen political controversy. One aspect of his work at the Colonial Office may be specially mentioned here. That was the encouragement which he gave to the study of tropical diseases. He saw clearly that one of the great obstacles to the development of the possessions of the Crown in the tropics was the prevalence of diseases in them which played havoc with the health of the white man.

The Milk and Dairies Bill.

The main question which was discussed in regard to the Milk and Dairies Bill by the Standing Committee of the House of Commons on Thursday, July 2nd, was the inspection of persons employed in or about dairies. Clause 2 authorises the Local Government Board to make orders "for the inspection of dairies and persons employed in or about dairies." An amendment was moved to omit the workers from inspection, but it was opposed by Mr. HERBERT SAMUEL, President of the Local Government Board. He said that there was no intention to establish routine inspection into the health of the persons employed. What the Bill had in contemplation was the occurrence of an epidemic of diphtheria or enteric fever, and the necessity of taking steps to ascertain the cause. For example, certain people who had had enteric fever afterwards became carriers of the germs of the disease, and this danger had to be guarded against. The inspector on his rounds could see whether those who were coming into contact with the milk were cleanly in their persons. Several honourable Members strongly insisted that it was highly desirable to insist upon cleanliness amongst rural workers. The amendment was ultimately withdrawn.

On Monday, July 6th, the Committee had under consideration Mr. ASTOR'S amendment to insert a provision to authorise the use in connexion with the sale of milk of the term "certified milk" and to prohibit the application of such a description to milk which did not fulfil the prescribed conditions. Mr. HERBERT SAMUEL accepted the amendment. He said that much might be done to improve the quality of milk if a higher rate of profit could be obtained by traders who sold milk produced under a system of official regulation and inspection. Mr. ASTOR'S proposal was agreed to.

Milk and Dairies (Scotland) Bill.

The Standing Committee on Scottish Bills of the House of Commons has concluded its examination of the details of the Milk and Dairies (Scotland) Bill. The measure has been reported to the House. Some discussion on the powers of inspecting milk supplies arose during the last sitting of the Committee. Edinburgh and Glasgow under their private Acts possess wider powers of inspecting sources of supplies outside their areas than they would possess if they were under the provisions of the Bill. It was decided by the Committee that those two cities should retain their existing powers of inspection uncurtailed.

National Health Insurance Report.

The report for 1913–14 on the Administration of National Health Insurance has been published as a Parliamentary Blue-book.

Voluntary Insurance Bill.

Sir RICHARD COOPER has introduced in the House of Commons a Bill "to repeal the National Insurance Acts, 1911 and 1913, and to establish a system of voluntary insurance against loss of wages through sickness and unemployment, and for other purposes relating thereto." It was read a first time.

Housing Bill.

Mr. RUNCIMAN, President of the Board of Agriculture, on Wednesday, July 8th, introduced in the House of Commons

a Bill for the purpose of giving to the Board of Agriculture and Fisheries "powers with respect to the housing in agricultural districts of persons belonging to the working classes, and to make provision with respect to the housing of persons employed by or on behalf of Government departments where sufficient dwelling accommodation is not available." The right honourable gentleman mentioned that it was proposed to provide £3,000,000 for rural housing and building cottages. The sum to be provided for housing Government employees amounted to £2,000,000. The Bill was read a first time.

HOUSE OF COMMONS.

WEDNESDAY, JULY 1ST.

Infant Mortality.

Mr. PIKE PEASE asked the President of the Local Government Board to state the rates of infant mortality and of stillbirths for the United Kingdom in 1913.—Mr. HERBERT SAMUEL replied: The rate of infant mortality in the United Kingdom in 1913 was 108 deaths under one year of age per 1000 births registered. The proportion of stillbirths cannot be stated, as these are not registrable, and information in regard to them is obtainable only for areas which have adopted the Notification of Births Act, 1907. These areas do not in all cases tabulate the information which they obtain, but it may be stated that during 1912 the stillbirths notified under this Act in the County of London numbered 2593. This number amounts to 2·4 per cent. of the total births notified, and to 0·57 per 1000 of the estimated population at the middle of the year.

THURSDAY, JULY 2ND.

Insured Persons in Ireland.

Mr. WEDGWOOD BENN informed Mr. GRETTON that the latest available figures showed that there were 729,598 insured persons in Ireland, of whom 717,798 were members of Approved Societies.

Deposit Contributors.

Mr. RUPERT GWYNNE asked the honourable Member for St. George's-in-the-East whether he would consider the advisability of making known at an early date the proposals of the Government regarding amendments to the National Insurance Act and the future position of deposit contributors in particular, so that honourable Members might have an opportunity of discussing these proposals with members of Approved Societies and others interested before the matter was discussed in the House.—Mr. WEDGWOOD BENN replied: The Insurance Commissioners are conferring to-day with the Advisory Committee, on which all types of Approved Societies are fully represented, and any proposals of the character referred to will be introduced without avoidable delay.

Grants to Pathological Laboratories.

Mr. CHANCELLOR asked the Chancellor of the Exchequer what amount of the sum of £250,000 to be applied this year to tuberculosis, nursing, and pathological laboratories was to be expended on pathological laboratories.—Mr. LLOYD GEORGE answered: The amount is £50,000.

Mr. CHANCELLOR asked the right honourable gentleman whether the work to be carried on in the pathological laboratories which were to be provided for in this year's Finance Bill would include experiments on living animals.—Mr. LLOYD GEORGE said in reply: The proposed grant is in respect of laboratories to be used primarily for purposes of diagnosis and not of research.

The Grant for Tuberculosis Treatment.

Replying to Mr. ASTOR, Mr. LLOYD GEORGE said: A statement will be made shortly giving particulars of the administration of the proposed grant for tuberculosis referred to in my speech on introducing the Budget.

Motor Ambulances and Petrol Duty.

Mr. CROOKS asked the Chancellor of the Exchequer what steps he was taking to exempt this year all authorities under the Local Government Board who had a service of motor ambulances to convey patients to hospitals and infirmaries from the duty upon petrol spirit.—Mr. LLOYD GEORGE wrote in reply: I am proposing to deal with this matter in connexion with the Revenue Bill, and if the honourable Member will put down a clause in due course I shall be glad to consider it.

MONDAY, JULY 6TH.

The Disabilities of Medical Officers of Health.

Sir PHILIP MAGNUS asked the President of the Local Government Board what steps, if any, he had been able to take to remove the pressing disabilities of medical officers of health as regarded insecurity of tenure, absence of any scheme of superannuation, and inability to obtain payment of travelling expenses in discharge of their duties, which were brought under his notice by the deputation which he and the Chancellor of the Exchequer and the President of the Board of Education recently received; and whether the position of sanitary inspectors, as regarded some of their disabilities, was likely to be improved.—Mr. HERBERT LEWIS (on behalf of Mr. HERBERT SAMUEL) replied: I can say no more at the present moment than that the matter is engaging the close attention of my right honourable friend.

The Grants for Sick Nursing.

Dr. CHAPPLE asked the Chancellor of the Exchequer whether he had received a communication from the Scottish National Conference of Friendly Societies urging that the administration of the grants for sick nursing, tuberculosis, and pathological laboratories be not separated from the present administrators of medical benefit; and, if so, would he say what his attitude would be towards their representations.—Mr. LLOYD GEORGE said in reply: The answer to the first part of the question is in the affirmative. I received a deputation on this subject on Friday last. The matter is engaging the careful attention of the Government.

Cripples' Hospitals.

Lord CHARLES BERESFORD asked the Chancellor of the Exchequer whether he was aware that at the Cripples' Hospital and College at Alton 95 per cent. of the cripples who went there were cured, who otherwise would succumb or be cripples for life; and, looking to the amount of good that this hospital did, whether he could see his way to give a State grant to the hospital and also to create hospitals of a similar character throughout the country.—Mr. LLOYD GEORGE answered: I am well aware of the brilliant work carried on at the hospital referred to by the noble lord. The general question of hospital accommodation is now receiving the attention of His Majesty's Government, and in the meantime I fear I can make no statement.

TUESDAY, JULY 7TH.

Sanitary Authorities in England and Wales.

Mr. ASTOR asked the President of the Local Government Board how many local sanitary authorities there were in England and Wales; how many medical inspectors there were in the service of the Local Government Board whose duty it was to inspect personally and keep in personal touch with the work of these authorities; and what were the other duties of these officers.—Mr. HERBERT SAMUEL wrote in reply: The number of sanitary authorities in England and Wales is 1870. The medical inspectors of the Local Government Board are not specially deputed to make routine inspection of the work of each of these authorities, but in the performance of their various duties, such as the holding of local inquiries, investigations into sanitary circumstances and outbreaks of disease, the inspection of vaccination, and the visiting of localities and conferences with local representatives for various other purposes, they are brought into constant touch with the sanitary authorities and their administration.

Panel Patients in Wales.

Lord NINIAN CRICHTON-STUART asked the honourable Member for St. George's-in-the-East whether any panel patients had been transferred from the Rhymney Valley Medical Association to the Bargoed and District Sick and Medical Aid Society after the closing of the panel list for the year on Dec. 14th, 1913; whether the latter society was an approved society and officially recognised at that date; and whether, under the circumstances, these transfers had been sanctioned.—Mr. WEDGWOOD BENN replied: My right honourable friend is informed by the Welsh Insurance Commissioners that the answer to the first and second parts of the question is in the negative. The third part does not, therefore, arise.

Dental Certificates.

Mr. RAFFAN asked the Parliamentary Secretary to the Board of Education whether a Departmental Committee had recently been appointed to consider the question of dental certificates; if so, whether the Committee had now concluded its deliberations and submitted its report, and when the publication of the report might be expected.—Mr. TREVELYAN replied: The answer to the first part of the question is in the affirmative. The report of the Committee will be issued very shortly.

BOOKS, ETC., RECEIVED.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, LORD BALTIMORE PRESS, Baltimore.
Proceedings of the American Medico-Psychological Association at the Sixty-ninth Annual Meeting, Canada, 1913.

BELL, GEORGE, AND SONS, London.
The Feeding of School Children. By M. E. Bulkley, London School of Economics. Price 3s. 6d. net.

DULAU AND CO., 37, Soho-square, London.
Drapers' Company Research Memoirs. Studies in National Deterioration. IX. By M. H. Williams, M.B., B.S., D.P.H., Julia Bell, M.A., and Karl Pearson, F.R.S. Price 6s.

GRIFFIN, CHARLES, AND CO., London.
A Practical Handbook of the Tropical Diseases of Asia and Africa. By H. C. Lambert, M.A., M.D. Six Coloured Plates and 82 other Illustrations. Price 8s. 6d. net.

HARRAP, GEORGE C., Portsmouth-street, Kingsway, London.
Biology of Sex for Parents and Teachers. By T. W. Galloway, Ph.D., Professor of Biology, James Millikin University, Decatur, Illinois. Price 2s. net.
Plant and Animal Children: How They Grow. By Ellen Torelle, M.A. Price 2s. 6d. net.
Hygiene for Girls: Individual and Community. By Florence Harvey Richards, M.D., Medical Director, William Penn High School. Price 2s. 6d. net.

LEHMANN, J. F., München.
Arzt und Schule. Ziele und Erfolge der Schulkommission des Aerztlichen Vereins München auf dem Gebiete des Mittelschulwesens. 1904–1914. Price M.2.

LEWIS, H. K., London.
The Ileo-cæcal Valve. By A. H. Rutherford, M.D. Edin. Price 6s. net.

LONGMANS, GREEN, AND Co., London.
An Introduction to the Study of Organic Chemistry. By H. T. Clarke, D.Sc. Lond., F.I.C. Price 6s. 6d.

MALOINE, A., Paris.
La Guerre en Bulgarie et en Turquie Onze Mois de Campagne. Par le Prof. Dr. Octave Laurent. Price Fr.6.

MURRAY, JOHN, London.
Historical Account of Charing Cross Hospital and Medical School, with which is included Some Account of the Origin of the Other Hospitals and Schools in London. With 40 Illustrations and Plates of Old London. By William Hunter, M.D., F.R.S. Edin., F.R.C.P. Price 21s.

URBAN UND SCHWARZENBERG, Berlin und Vienna.
Die Experimentelle Pharmakologie als Grundlage der Arzneibehandlung. Ein Lehrbuch für Studierende und Aerzte. Von Dr. Hans H. Meyer und Dr. R. Gottlieb. Dritte, neubearbeitete Auflage. Price M.15.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARRINGTON-WARD, L. E., Ch.M., F.R.C.S. Eng., F.R.C.S. Edin., has been appointed Surgeon to Out-patients at the Great Northern Central Hospital.

BEDDARD, A. P., M.D. Oxon., F.R.C.P. Lond., has been appointed Physician to Guy's Hospital.

BRERETON-BARRY, J., L.A.H., has been appointed House Surgeon at the Victoria Central Hospital, Liscard, and Resident Medical Officer to the Wallasey Dispensary.

BUCKELL, M. A. C., M.B., B.S. Lond., has been appointed Casualty House Surgeon at St. Mary's Hospital.

COPE, V. Z., M.D., M.S. Lond., has been appointed Surgeon in Charge of the Orthopædic Department at St. Mary's Hospital.

DAVIES, H. T., M.D., C.M. Edin., F.R.C.S. Eng., has been appointed Officer of Health and Medical Superintendent of the Infectious Diseases Hospital by the Tredegar Urban District Council.

FAULL, W., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Osmotherly District of the county of York.

HOWELL, JAMES B., D.P.H., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health for Hammersmith.

JONES, WILLIAM R., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Blackburn and East Lancashire Royal Infirmary.

KNOWLES, JOHN, L.D.S. Eng., has been appointed whole-time Dentist to the Gloucestershire Education Committee.

LEES, K. A., M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Demonstrator of Anatomy to St. Mary's Hospital Medical School.

MACDONALD, J. S., L.R.C.P. & S. Edin., has been appointed to the Chair of Physiology in the University of Liverpool.

MACENRICHT, D. J. MORRISON, M.B., B.Ch., B.A.O. N.U.I., has been appointed House Surgeon at Swansea General and Eye Hospital.

MACKAY, DUNCAN MATHESON, M.D., C.M. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Hull Royal Infirmary.

PINCHIN, A. J. SCOTT, M.D. Lond., M.R.C.S., has been appointed Physician to Out-patients at the Hampstead General and North-West London Hospital.

POULTON, E. P., M.D. Oxon., M.R.C.P. Lond., has been appointed Assistant Physician to Guy's Hospital.

TODD, J. N., M.B., Ch.B. Glasg., has been appointed Anæsthetist to the Harrogate Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARGYLL AND BUTE DISTRICT ASYLUM, Lochgilphead.—Medical Superintendent. Salary £500 per annum, with house and allowances.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BATH, WINSLEY SANATORIUM FOR CONSUMPTION.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

BIRKENHEAD UNION INFIRMARY.—Senior Resident Assistant Medical Officer. Salary £175 per annum, with board, apartments, &c.

BIRMINGHAM, CITY FEVER HOSPITAL, Little Bromwich.—Assistant Medical Officer. Salary £200 per annum, with board, residence, and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £240 per annum, with apartments, fire, light, and attendance.

BIRMINGHAM, JAFFRAY BRANCH OF THE GENERAL HOSPITAL, Gravelly Hill.—Resident Medical and Surgical Officer. Salary £150 per annum, with board, residence, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

BIRMINGHAM, QUEEN'S HOSPITAL.—One House Physician and Two House Surgeons for six months. Salaries at rate of £50 per annum, with board, lodging, and washing.

BIRMINGHAM UNION.—Fourth Assistant Medical Officer at Dudley-road Infirmary. Salary £140 per annum. Also Assistant Medical Officer at Selly Oak Infirmary and House. Salary £160 per annum. Each with apartments, rations, laundry, and attendance.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, &c.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House Surgeon for six months. Salary £75 per annum, with board, residence, and laundry.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence, board, and laundry.

BRADFORD CITY HOSPITAL FOR CONSUMPTIVES.—Resident Medical Officer. Salary £200 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CAMBERWELL INFIRMARY AND GORDON-ROAD INSTITUTION.—Second Assistant Medical Officer. Salary £170 per annum. Also Third Assistant Officer for Infirmary. Salary £150 per annum. Each with apartments, board, and washing.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—Two House Surgeons for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.—Bacteriologist. Salary £300 per annum.

CHELSEA INFIRMARY AND WORKHOUSE, S.W.—Medical Superintendent and Medical Officer. Salary £500 per annum, with unfurnished house, fuel, and light. Also Second Assistant Medical Officer for Infirmary. Salary £160 per annum, with board, washing, apartments, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon and House Physician. Salary £100 per annum, with board, residence, and washing in each case.

CROYDON, COUNTY BOROUGH OF.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £250 per annum.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—House Physician and Assistant House Surgeon. Salaries £125 and £80 per annum respectively, with residence, board, and laundry.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

DEWSBURY UNION INFIRMARY.—Female Resident Assistant Medical Officer. Salary at rate of £100 per annum, with rations, apartments, washing, &c.

ESSEX EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £300 per annum.

FALKLAND ISLANDS.—Assistant Colonial Surgeon, unmarried. Salary £400 per annum.

FARNHAM, HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

GLAMORGAN COUNTY COUNCIL.—Medical Officer for the Inspection of School Children. Salary £250 per annum.

GLOUCESTERSHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Surgeon, for six months. Salary £60 per annum, with board, lodging, and laundry.

GREENWICH UNION INFIRMARY AND WORKHOUSE.—First Assistant Medical Officer, unmarried. Salary £175 per annum, with apartments, rations, and washing.

GRIMSBY AND DISTRICT HOSPITAL.—Senior House Surgeon. Also Junior House Surgeon. Salaries £100 and £80 per annum respectively, with board, lodging, attendance, and washing.

HALIFAX ROYAL INFIRMARY.—Second House Surgeon and Third House Surgeon, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

HEREFORDSHIRE COUNTY COUNCIL.—Assistant to Medical Officer of Health. Salary £300 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—House Physician for six months. Salary 30 guineas.

HUDDERSFIELD ROYAL INFIRMARY.—Assistant House Surgeon. Salary £80 per annum, with board, rooms, and washing.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary at rate of £80 per annum, with board and lodging. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Female Assistant House Surgeon. Salary £45 per annum, with board and laundry.

LEEDS GENERAL INFIRMARY.—Resident Obstetric Officer for six months. Salary £50 per annum, with board, residence, and laundry. Also Two House Physicians for six months, without salary, but with board, residence, and laundry.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

LEICESTER ROYAL INFIRMARY.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, apartments, and washing.

LIVERPOOL CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, washing, and lodging.

LIVERPOOL, HIGHFIELD INFIRMARY.—Assistant Medical Officer. Salary £180 per annum, with apartments, &c.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—Research Assistant at Runcorn Research Laboratory. Salary £150 per annum.

LIVERPOOL STANLEY HOSPITAL.—Two House Physicians and a House Surgeon. Salary £75 per annum each, with board, residence, and laundry.

LONDON MEDICAL MISSION, Endell-street, W.C.—Resident Medical Officer, unmarried. Salary £120 per annum, with board and residence.

LOWESTOFT AND NORTH SUFFOLK HOSPITAL.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

MACCLESFIELD, CHESHIRE COUNTY ASYLUM, Parkside.—Locum Tenens for about two months. Salary 5 guineas per week, with apartments, board, and washing.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £250 per annum, with quarters, board, attendance, washing, &c.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £130 per annum, with apartments, attendance, coal, and gas.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—House Surgeon for Children's Department. Also House Surgeon for Obstetrical and Gynæcological Departments. Each for six months. Salary £25 per annum each, with board and residence.

NEWARK-UPON-TRENT HOSPITAL.—Female Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—Two House Surgeons, unmarried. Salary £120 per annum each, with apartments, board, washing, attendance, &c.

NORWICH, JENNY LIND HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer for six months. Salary £80 per annum, with board, apartments, and laundry.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

OGMORE AND GARW URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £325 per annum.

PETERBOROUGH INFIRMARY AND DISPENSARY.—House Surgeon, unmarried. Salary at rate of £120 per annum, with residence, board, and laundry.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £90 per annum, with board, residence, and washing.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £90 per annum, with board, &c.

PORTSMOUTH WORKHOUSE INFIRMARY, WORKHOUSE, AND CHILDREN'S HOME.—Second Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, &c.

PRESTON COUNTY BOROUGH.—School Medical Officer. Salary £350 per annum.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Junior House Physician and Junior House Surgeon for six months. Salary £75 per annum each, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

RAMSGATE GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

ROCHDALE INFIRMARY AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, residence, and laundry.

ROYAL ARMY MEDICAL CORPS.—Twelve Commissions.

ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Resident Medical Officer. Also House Physician. Both for six months. Salaries at rate of £120 and £80 per annum respectively, with board, lodging, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five Appointments.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Surgeon to Out-patients. Also Junior Resident Medical Officer. Salary at rate of £50 per annum, with board and washing.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Assistant Surgeon.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

SALFORD ROYAL HOSPITAL.—House Surgeon, Junior House Surgeon, and Casualty House Surgeon. Salary at rate of £100 per annum each, with board and residence.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL (OUT-PATIENT DEPARTMENT).—House Surgeon. Salary £120 per annum, with board and residence.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Senior and Junior Female House Surgeons, unmarried. Salaries £100 and £80 per annum respectively, with board, residence, and laundry.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £110 per annum, with board and apartments.

SOMERSET COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £300 per annum.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SURREY COUNTY COUNCIL.—Assistant Medical Officer of Health. Salary £400 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—Two House Surgeons. Salary £125 per annum, with board, washing, and attendance. Also House Physician. Salary £125 per annum, with board, apartments, and laundry.

THROAT HOSPITAL, Golden-square, W.—Two Resident House Surgeons. Salary £75 per annum, with board, residence, &c.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board and lodging.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon. Salary £110 per annum, with board, residence, and laundry.

WANDSWORTH UNION INFIRMARY, Ouseley-road, Balham, S.W.—Senior Assistant Medical Officer, unmarried. Salary at rate of £150 per annum, with board, lodging, and washing.

WEST BROMWICH, COUNTY BOROUGHS OF WALSALL AND WEST BROMWICH.—Tuberculosis Officer. Salary £500 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM, COUNTY BOROUGH OF.—Assistant School Medical Officer. Salary £250 per annum.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Junior House Physician and Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

WEST HARTLEPOOL, CAMERON HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and rooms.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Resident Casualty Officer and Anæsthetist. Salary at rate of £40 per annum, with board, lodging, washing, &c.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

WREXHAM INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Shardlow, in the county of Derby; at Malton, in the county of York; and at Runcorn, in the county of Chester.

Births, Marriages, and Deaths.

BIRTHS.

BOOTH.—On July 8th, at 78, Southampton-street, Reading, the wife of Norman Booth, M.B., B.S. Lond., of a son.

GOODMAN.—On June 28th, at Powderham-crescent, Exeter, the wife of W. H. Goodman, L.D.S. R.C.S. Eng., of a daughter.

KING.—On June 17th, at Castries, St. Lucia, B.W.I., the wife of Alex. King, M.B., of a son.

MARSHALL.—On July 4th, at Old Court, Ealing, the wife of C. F. Marshall, M.D., F.R.C.S., of a son.

PINEO.—On June 29th, at Richmond House, Langford, Somerset, the wife of Ernest D. Pineo, M.R.C.S., L.R.C.P., of a daughter.

SANDILAND.—On July 3rd, at the City of Westminster Infirmary, South Kensington, the wife of Digby S. Sandiland, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

CANE—GUYOT.—On July 4th, at St. Martin's-in-the-Fields, Trafalgar-square, Lionel Charles William Cane, M.R.C.S., L.R.C.P., to Doris, eldest daughter of Mr. and Mrs. Guyot, of Belvedere, Kent.

HUGHES—REEVES-SMITH.—On July 2nd, at St. George's, Hanover-square, Basil Hughes, F.R.C.S., to Janet, only daughter of Mr. and Mrs. Reeves-Smith, of Berkeley-street, W.

PEARSON—STANLEY.—On July 1st, at the Parish Church, Edgbaston, Dudley Garencières Pearson, M.B., M.R.C.S., L.R.C.P., to Annie Gordon, eldest daughter of William Stamer Stanley.

DEATHS.

BURGESS.—On June 10th, at Darjeeling, India, John Hay Burgess, M.D., M.R.C.P. Lond., F.R.C.S. Eng., Captain, I.M.S., Surgeon to His Excellency the Governor of Bengal, aged 34 years.

COLEMAN.—On July 6th, at Epsom, Charles Alfred Coleman, M.D., aged 65 years.

LAIDLAW.—On July 2nd, at Grantchester Meadows, Cambridge, Robert Laidlaw, M.D., F.R.C.S. Edin., in his 73rd year.

ROSE.—On July 1st, at Warwick-avenue, Maida-hill West, W., Henry Cooper Rose, M.D., Surgeon-Major, and of the Middle Temple, Barrister-at-law, aged 83 years.

VACHELL.—On July 2nd, at a nursing home at Clifton, Charles Tanfield Vachell, M.D. Lond., of Cardiff, aged 66 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

AN INTERESTING HOSPITAL.

A CORRESPONDENT writes us an account of the hospital which the Roman Catholic Sisters of Providence have built recently in Seattle, State of Washington, U.S.A. The hospital of 375 beds cost a million dollars, and contains a certain number of free beds and others for which £2 a week (in room with four to six beds) and upwards are asked. There are large private rooms, with bathroom *en suite*, which cost £8 a week, and, in addition, patients pay from 5 to 10 dollars for the use of the operation room if required, and in every case the fees of the patient's physician who has sent him into this hospital are to be paid in addition. The hospital is a good type of the modern paying institution, and is nursed by 50 religieuses and 80 nurses, mostly pupils undergoing a three years' course of training.

"An ambulance brings the patient to a door on the ground floor," writes our correspondent, "but you, as a visitor, will mount a flight of steps that covers this lower door, and you will enter a spacious white-tiled hall on the first of the six floors of the building. The surgical suite is on the uppermost floor, where there are eight operation rooms with excellent light from roof and side, and separated by well-equipped sterilising rooms, while in an anteroom are tanks for the after-washing of all appliances used in the operation. There are also a dressing-room for the surgeons, X ray and ophthalmoscope room, and anæsthetising rooms. The wards have never more than six beds, generally less, and in the private rooms there is always a wardrobe sunk in the wall. The floors are of hard wood, corners always rounded, the doors are smooth, and the mouldings very low and rounded. Lighting is by overhead lamps concealed inside sanded glass globes, in addition a light on the wall. Each patient has a signal for the nurse, which lights a green lamp over the door, easily conspicuous in the spacious white-tiled corridor; other lights—one in the nurses' duty room and one in the superintendent nurse's office—are extinguished by the nurse when she goes to the patient. There are also red lights in the corridors, indicating the position of the wide fire-escapes. The hospital is built of fireproof cement concrete."

In illustration of the care taken in the preparation and distribution of the food, our correspondent writes: "In each section there is a diet kitchen, to which the food is brought from the main kitchen by a small lift. Here it is transferred to a steam-carving table, where it is portioned out and put on trays, with clean linen and attractive crockery. On a dresser for these trays, when not in use, there are numbers for each bed served, and the tray appropriate is placed there. The sisters here well support their traditional credit for serving appetising meals." Of the engine-room he says: "Three oil-fired Babcock and Wilcox water-tube boilers of 200 h.p. each provide steam to drive dynamos for the electric light. This installation makes electricity at six-tenths of a halfpenny per kilowatt, and the exhaust steam heats the building at 7½d. per square foot of heating surface over the 40,000 square feet of radiators in the building. The heat is regulated from the engine-room, but in every room there is an automatic regulator which keeps the temperature constant as desired. If the room is to be warmer, the valve admits more steam to the radiators and *vice versâ*. No fire is there in the hospital outside the power house, and gas is only used in the baking ovens and grill. The engine-room does a great deal for the hospital, and does it to the satisfaction of everyone. It takes the local water, filters it, and pumps it through the building, besides storing it under pressure for fire protection (supply of 500 gallons a minute) in case pressure in the town supply falls at a crisis. The engine-room makes 500 lb. of ice per day, and besides supplies iced water at 37° (40° in the wards) for drinking; ice is never allowed into the drinks. It also supplies cooled brine to all the refrigerators through the diet kitchens and the main kitchen where they are large like caves; some of the smaller have glass linings; the largest is tiled. Steam is also used for cooking at 250 lb. Even roasting is thus done (it seems to take twice as much steam as boiling), and the sister who took me round declared the meat thus roasted was far better cooked than that out of an ordinary roasting oven. She showed me with pride, too, the racks of bottles of preserved fruit they had prepared in the summer, when perhaps they might get a carload (some ten tons) of peaches, for example, when the sisters in their off hours would peel and stone these, for nothing is wasted.

The requisite air for ventilation is taken in through tempering coils, washed as it passes through a 7′ × 9′ screen of bronze gauze and distributed by two No. 14 Sirocco fans each delivering 41,000 cubic feet per minute, but each capable of doing the full work if one breaks down. From the plenum chamber the air is conveyed to the hospital by two passages 50″ × 74″ and by a third 84″ × 40″. High-pressure steam is supplied for the kitchen, also for steam-carving tables, sterilisers, and disinfectors, and low pressure for blanket warmers and mop driers. The pressure-water system keeps a constant flush going in the water closets, and the hot water-supply to lavatories. Another set of pipes to the engine-room serves the vacuum cleaners; their dust comes down to the engine-room and is burnt with other rubbish in an oil-fired destructor. Electric power supplies light, power for laundry, for the two large elevators and seven dumb waiters, and for the announcement service (the green light), which is worked through small accumulators; the large accumulators are always charged to prevent light failing in an operating theatre during an operation. This reminded one of the provision of portable electric lights with batteries in German battleships in case of failure of light during action. Telephones connected with the city system are everywhere and also a private installation which rings calls throughout the hospital, calls which vary according to the particular high official whose presence is needed. In the office is a master clock which every minute sends round a current which moves through one minute the hands on each of the 41 dials it controls in the hospital, and, in addition, makes the meal and other signals required to indicate that duty at this moment necessary."

"So well thought out is the whole scheme," concludes our correspondent, "you do not even have to go down to the office to pay your bill, but it is enclosed in the office in a carrier which is blown up to you through a pneumatic tube which later brings you back your change before, grateful and recovered, you leave this excellent and airy hospital from which you get, besides, so fine a view over beautiful Puget Sound."

NUMBER OF DOCTORS ON THE PANEL.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Feb. 21st, 1914, p. 580, you reported under Parliamentary Intelligence the reply of the Secretary to the Treasury as to the numbers of medical men on panels in England, Scotland, and Wales respectively as follows. "Mr. Wedgwood Benn: The approximate numbers of medical men on panels in England, Scotland, and Wales respectively are 16,300, 2700, and 1250 respectively, including medical men who are on more than one panel." These figures produce a total of 20,250 panel men. I observe that at the dinner of the National Medical Union, held on June 27th, 1914, it was stated that there are only 14,472 panel men. If this latest total is right, and there are actually only that number of individual men on the panel, then I suppose it would be correct to assume that there are 5778 names of medical men on panels which are duplications, or triplications, or so on (the difference between 20,250 names and 14,472 individuals). I wish to make a note of the figures for reference purposes.

I am, Sir, yours faithfully,

London, June 29th, 1914. ENQUIRER.

*** We see no other way to reconcile two statements, which apparently vary, while each was made with a sense of responsibility.—ED. L.

"DIE BUCHE SUCHE."

To the Editor of THE LANCET.

SIR,—Dr. F. S. Arnold will find some statistics of the relative frequency with which the beech and other trees are struck by lightning, as well as a good deal of other information on the subject, in the late Sir Jonathan Hutchinson's *Haslemere Museum Gazette*, Volume I., published by John Bale and Sons, London, pp. 118 and 202, &c.

I am, Sir, yours faithfully,

Seymour-street, W. E. MUIRHEAD LITTLE.

ARSENIC IN POTASSIUM CARBONATE.

AT the Manchester police court on June 16th six chemists were summoned at the instance of the Lancashire county council for an offence under the Food and Drugs Act—viz., selling on April 23rd salt of tartar not of the nature and quality demanded, inasmuch as the salt contained arsenic. The prosecutor made a statement as to the facts, and then asked the bench to allow the cases to be withdrawn, the defendants agreeing to pay the cost. Salt of tartar is known as carbonate of potassium, and there are several ways of manufacturing it. The old way was to make it from wood ash, when there was no risk of arsenic contamination. It is now made in England from a salt which comes from Germany. In the process this salt is treated with sulphuric acid, which it is well known often contains arsenic, and it was suggested that in that way the arsenic got into the carbonate of potassium.

The quantity of arsenic found varied from 9·5 grains to 4·5 grains per pound. Among 79 samples recently analysed by the county analyst only 23 were found free from arsenic, while the other samples contained from 1 grain to 14·5 grains per pound. The prosecutor believed that the defendants sold the salt not knowing it to be adulterated. But none of the defendants had any reason to suspect the presence of arsenic in the salt. They were all buying from reputable wholesale firms, who themselves had no suspicion. In the British Pharmacopœia itself there is no warning at all that arsenic may be an impurity.

WANTED—A HOME.

To the Editor of THE LANCET.

SIR,—Could any of your readers inform me where a gentleman would be taken into a home or family in a quiet country district or the seaside for the inclusive fee of 21s. per week? He is quite able to look after himself, and would not require any special care or nursing.

I am, Sir, yours faithfully,
J. POLLOCK SIMPSON, M.D.

8, Upper Montagu-street, W., July 2nd, 1914.

To the Editor of THE LANCET

SIR,—Can any of your readers recommend a convalescent home for a lady, where the services of a nurse can be obtained? Terms must be moderate. S.E. coast preferred.

I am, Sir, yours faithfully,
W. H. FROME YOUNG, M.R.C.S. Eng.

Bembridge, I.W., July 3rd, 1914.

FORCIBLE FEEDING.

A LETTER signed by 70 registered medical men objecting "to the forcible feeding as carried out in His Majesty's prisons" has been forwarded to the Home Secretary, with a request that Mr. McKenna will receive a deputation on the subject.

FLIES AND AERATED WATERS IN STOPPERED BOTTLES.

To the Editor of THE LANCET.

SIR,—The other day I sent for a bottle of lemonade and noticed all around the mouth of the stoppered bottle evidence of filth deposited there by flies. It is clear that the flies had been attracted by the remaining saccharine matter. This would, of course, also apply to the mouths of syphons. I write this letter in order that some inventive genius may bring forward a stopper—a simple matter—which will cover as a shield the aperture of the bottle and prevent flies depositing their filth there. A paper cover over the stopper could be used for bottles—as in the case of a well-known brand of bottled beer—and a small metal shield or cap, with chain, for syphons. It must be patent to everyone that if some protection is not made when the fluid is poured out of the bottle or syphon the filth of the flies must become mixed with it.

I am, Sir, yours faithfully,
July 3rd, 1914. A MEDICAL OFFICER OF HEALTH.

"BIOMALZ."

IN the analysis of the above preparation, a combination of malt extract with calcium glycerophosphate, we reported in THE LANCET of May 9th, 1914, that the percentage of moisture was 37·83. Two recent samples have since been examined, and the results showed a perceptible reduction in the amount of moisture—viz., 34·93 per cent. and 34·94 per cent. respectively.

ERRATUM.—In Dr. E. G. Fearnside's article in THE LANCET of last week on Diseases of the Pituitary Gland the acknowledgment to Mr. F. S. Kidd on page 23 should have been to Dr. Percy Kidd, while the author wishes to make acknowledgment also to Dr. Theodore Thompson.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced. In 1914:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
,, 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
June–July (Groningen).—University of Groningen 300th Anniversary Celebration.
July 6th–11th (Blackpool).—Twenty-ninth Congress of the Royal Sanitary Institute.
,, 15th–20th (Edinburgh).—Congress of the Royal Institute of Public Health.
,, 21st–23rd (Chester).—British Pharmaceutical Conference.
,, 27th–31st (London).—Fifth Annual Session of the Clinical Congress of Surgeons of North America.
,, 28th–31st (Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.
July–September (Australia).—Eighty-fourth Annual Meeting of the British Association for the Advancement of Science. (July 28th to August 3rd at Perth, August 8th to 12th at Adelaide, August 13th to 19th at Melbourne, August 20th to 26th at Sydney, August 27th to Sept. 1st at Brisbane).
Aug. 2nd–10th (Paris).—Tenth Congress of Esperantists.
,, 3rd–8th (London).—Sixth International Dental Congress.
,, 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.
,, 29th–Sept. 14th (Toronto).—Canadian National Exhibition.
Sept. 7th–12th (Berne).—International Congress for Neurology Psychiatry, and Psychology.
,, 10th–12th (Port William and Port Arthur, Ontario).—Fourth Annual Congress of the Canadian Public Health Association.
,, 21st–26th (Victoria, B.C.).—Dominion Exhibition.
,, 21st–28th (Vienna).—Third International Congress on Diseases of Occupation.
,, 30th–Oct. 4th (Brussels). Fourteenth French (de langue française) Congress of Medicine.
Oct. 31st–Nov. 2nd (Berlin).—First Congress of the International Society for Sexual Research.
Nov. 15th–21st (London).—Health Week. (Under the direction of the Health Week Committee appointed by the Royal Sanitary Institute.)

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. D. Corbett: Clinique (Skin). 5.15 P.M., Lecture:—Dr. T. D. Lister: Artificial Pneumothorax.
TUESDAY.—4 P.M., Dr. E. H. Shaw: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. D. Mortimer: The Medico-Legal Position of the Anæsthetist.
WEDNESDAY.—4 P.M., Mr. A. E. Johnson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. D. Windle: Some Modes of Respiration in Pneumonia (lantern demonstration).
THURSDAY.—4 P.M., Mr. G. Taylor: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. S. R. Wells: Certain Irregularities of the Pulse.
FRIDAY.—4 P.M., Mr. E. A. Peters: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye. 5 P.M., Lecture:—Mr. T. Gray: Some Surgical Aspects of Indigestion.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Clinical Lecture:—Dr. Davis: Diseases of the Ear.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M. Mr. Souttar: Demonstration of Minor Operations. 12 noon Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye. 5 P.M., Lecture:—Dr. Bernstein: Pyrexia.
THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. 5 P.M., Lecture:—Dr. Bernstein: Pyrexia.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Dr. Bernstein: Bacillus Coli Infections.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Operations of the Eye. 12 noon, Lecture:—Mr. T. Gray: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. B. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).
TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Nose, Throat, and Ear (Mr. H. D. Gillies). X Ray and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. Dorell).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. B. Gillespie); Eye (Mr. E. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, Medical School, City-road, E.C.

MONDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Cardiac Department, Dr. Stott; Out-patient Department, Dr. Phear, Dr. S. Thompson. 3 P.M., Wards, Dr. Phear.

TUESDAY.—9 A.M., Laryngological Department, Mr. Mant. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. M. Leslie, Dr. B. King; Operations, Mr. A. Evans. 3 P.M., Wards, Dr. White. 4 P.M., Wards, Dr. M. Leslie.

WEDNESDAY.—2 P.M., Wards, Dr. A. Davies; Out-patient Department, Dr. Drysdale, Dr. Kellie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan.

THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 10 A.M., Cardiac Department, Dr. Stott. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. Phear, Dr. S. Thompson. 4.30 P.M. Laryngological Department, Mr. Mant.

FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert; Out-patient Department, Dr. M. Leslie, Dr. B. King. 5 P.M., Lecture-Demonstration:—Dr. Kellie: Broncho-pneumonia.

SATURDAY.—10 A.M., Out-patient Department, Dr. Drysdale, Dr. Kellie. 11.30 A.M., Roentgen Ray Department, Dr. Jordan.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Dr. Burrell: Treatment with Tuberculin of Tuberculosis in Children.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.

Course of Demonstrations for Post-Graduates:—

FRIDAY.—4 P.M., Dr. S. R. Gloyne: The Use of Tuberculin. (Laboratory demonstration.)

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3 P.M., Mr. Stuart-Low: Diseases of the Ear.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

TUESDAY.—MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES, Quay-street.—4.30 P.M., Dr. W. Dyson: Bullous and Erythematous Diseases of the Skin.

WEDNESDAY.—ROYAL INFIRMARY—4.30 P.M., Dr. Brockbank: Cases of Anæmia and a Simple Method of Blood-examination.

THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Demonstration of Cases by Medical Staff.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1914 will be ready shortly. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 8th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 2	29·64	S.W.	0·20	123	77	68	66	71	Cloudy
,, 3	29·68	S.	0·03	118	71	63	63	64	Cloudy
,, 4	30·06	W.	...	119	74	56	56	61	Fine
,, 5	29·92	S.W.	0·33	90	68	58	58	60	Cloudy
,, 6	29·77	W.	0·01	107	66	54	54	55	Cloudy
,, 7	29·93	W.	0·05	124	69	54	56	62	Cloudy
,, 8	29·99	S.	...	82	64	57	59	60	Raining

The following magazines, journals, &c., have been received:—St. Bartholomew's Hospital Journal, St. Thomas's Hospital Gazette, Undergraduate, New York Post-graduate, American Journal of Roentgenology, Medico-Legal Journal, American Journal of Tropical Medicine, Journal of Laryngology, Rhinology, and Otology, Canadian Journal of Medicine and Surgery, Journal of Comparative Pathology and Therapeutics, West London Medical Journal, Concrete, British Journal of Children's Diseases, Science Progress, Practitioner, British Journal of Inebriety, Review of Neurology and Psychiatry, Clinique Infantile, New Zealand Medical Journal, Magazine of the London (Royal Free Hospital) School of Medicine for Women, Pediatrics, Cleveland Medical Journal, Archiv für Schiffs- und Tropen-Hygiene, Quarterly Journal of Medicine, Caledonian Medical Journal, Revue de Gynécologie, Public Health, Dominion Medical Monthly, South African Nursing Record, American Journal of Tropical Diseases.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Dr. F. W. Alexander, Lond.; Mr. F. Ackery, Lond.; Argyll and Bute District Lunatic Asylum, Lochgilphead, Secretary of; Anderson College of Medicine, Glasgow, Secretary of; A. H. T.; Messrs. Arnold and Sons, Lond.; Anglo-American Pharmaceutical Co., Lond.; Apollinaris Co., Lond.

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